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LEGAL ASPECTS OF MEDICAL RESEARCH

Chairman's Address

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Medical research is beneficial to health and welfare and most of the American people willingly support t financially and otherwise. Only the antivivisectionsts are actively opposed to research using animals, although several religious groups are passive toward medical research. The high esteem in which medical research is rightfully held finds only limited legal expression in the statutes of our federal, state and local governments.

Universities are charged by the state governments with the two great functions of imparting and advancng knowledge. Medical research, which involves the conception of ideas and their critical and unprejudiced evaluation fully warrants its present high position in our universities, which control colleges of medicine and associated hospitals. Medical research is also conducted in independent hospitals and research institutes, in quasicommercial laboratories and to a limited extent by individual practicing physicians. Each of these is backed by the legal recognition of a state government and its statutes.

The National Science Foundation Bill would provide needed federal financial support for medical research and for prospective medical scientists. Under existing laws the federal government now supports medical research programs of and through the Army, Navy, Air Force, Public Health Service, Department of Agriculture, Veterans Administration and Atomic Energy Commission. The Naval Medical Research Institute, the National Institutes of Health and the Army School of Aviation Medicine are examples of splendid medical research institutions under direct federal auspices.

The National Academy of Sciences and the National Research Council, which are quasifederal agencies, play an important role in stimulating medical research. Certain of our state and city departments of health contribute notably to medical knowledge, as do some of our city and county hospitals. Moreover, a number of foundations which support medical research, such as the Rockefeller, Macy and Markle foundations, the National Foundation for Infantile Paralysis, the American Cancer Society and the American Heart Association, are recognized by our state incorporation laws and by being accorded a tax-exempt status under the United States Internal Revenue Code.

Animal experimentation is an all-important arm of medical research. Yet thirty-one of the forty-eight states do not have legislation directly concerned with animal experimentation. Fourteen states (California, Idaho, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New York, Pennsylvania, South Dakota, Texas, Washington and Wisconsin) positively sanction the employment of animals in medical research. Of these, Michigan, Minnesota and New York have the most effective laws regulating the humane use of animals for the advancement of medical and biologic knowledge through authorizing supervision of research laboratories by the state commissioner of health or the state livestock sanitary board.

The statutes of the other eleven states provide to varying extents that no portion of the law relating to cruelty to animals shall be construed to interfere with the right to use animals for certain scientific purposes. This provision is necessary because the antivivesectionists regard animal experimention *per se* as cruel and attempt to pervert the function of humane laws in order to have medical research outlawed. Medical and biologic investigators in common with other citizens are, of course, subject to prosecution for any procedure generally regarded as cruel. A medical research worker has never been convicted under our humane laws.

In Hawaii a movement is under way for inclusion in the proposed new state constitution, to be adopted if statehood is extended to the territory, of a "medical bill of rights" providing for medical research, including animal experimentation. Such a provision might seem to be unduly specific for a "fundamental law," yet constitutional authorities inquiring into the matter point out that the framers of the United States Constitution included many provisions which for their day were as explicit and timely as a provision for implementing medical research would be today. It was a similar step for our forefathers to resolve the then controversial issue of freedom of the press and religion.

All medical research institutions are handicapped by a shortage of dogs, while hundreds of thousands of dogs are slaughtered yearly by city pounds and animal welfare societies throughout the country. Twenty of our cities (Atlanta and Augusta, Ga.; Birmingham, Ala.; Charleston, S. C.; Chicago; Dallas, Texas; Denver;

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From the Department of Physiology, University of Illinois College of Medicine (Dr. Wakerlin) and from the Department of Business Law, Northwestern University School of Commerce (Mr. Sembower).

Detroit; Galveston and Houston, Texas; Iowa City; Little Rock, Ark.; Louisville, Ky.; Memphis, Tenn.; Morgantown, W. Va.; Nashville, Tenn; Richmond, Va.; St. Louis, Salt Lake City and Winston-Salem, N. C.) provide for the release of condemned pound dogs to local medical and biologic research and teaching institutions. In four of these (Chicago, Detroit, Houston and St. Louis) the provision is by specific ordinance; in others by various administrative procedures with local authorities, and exceptionally by virtue of the research institution serving as the municipal pound.

Some medical research requires human experimentation, which, like animal experimentation, involves legal and moral issues. The outstanding difference between human and animal subjects lies in the obvious fact that consent of the former can and should be obtained. The good faith of the medical scientist is demonstrated by his submission of himself as an experimental subject when possible. The Nazi medical scientists who were convicted of medical crimes against humanity were found guilty of employing human subjects without their consent, of using human subjects when animals would have answered and of evincing gross incompetence in the conception and execution of certain human experiments.

Obviously the medical scientist who is a licensed physician is liable under the malpractice laws and the medical scientist who is not a licensed physician, under the law of personal injury. Human experimentation should be conducted under the supervision of a licensed physician as a protection to the human subject and the research workers.

Other laws which are favorable to medical research include the anatomic laws which provide unclaimed human bodies for research and teaching purposes, the patent laws which are occasionally invoked with reference to medical discoveries, laws governing consent for necropsy and laws providing for redress for slander or libel. The slander and libel laws have been of limited value in tempering the unfounded allegations of the antivivisectionists. Unfortunately, medical scientists have not sufficiently availed themselves of this remedy against the irresponsible, malicious and antisocial actions of the antivivisectionists.

Many of the unbridled verbal assaults of antivivisectionists appear to be plainly actionable under the libel and slander statutes, which provide legal penalties, and under the common law, which allows damages to the injured person. Since it is common for the defamers to reflect on the professional capacity of the physician or medical researcher and to accuse him of heinous impulses leading to torture and cruelty, such statements would constitute libel *per se* and not make it necessary for the complainant to establish actual monetary damages, which often are difficult to prove. The inconvenience and publicity of appearing as a complainant in such court proceedings is an understandable drawback to action being taken even by those most grievously wronged. However, from the point of view of the welfare of medical biologic science it may be desirable for medical scientists to seek redress, and some have recently filed suits.

LAWS UNFAVORABLE TO MEDICAL RESEARCH

In the face of overwhelming evidence to the contrary, the small but vocal antivivisection group continues to charge that medical research and animal experimentation are cruel and futile. Their societies are eager to claim preferred status under the tax laws in order to be tax exempt themselves and in order to encourage taxpayers to make gifts and bequests to them which they believe will be tax exempt under the income, gift and estate tax statutes of the federal and state governments. They are not entitled to such preferences since they engage actively in practices designed to influence legislators; they do not engage in "charitable" activities within a proper definition and understanding of the term.

The Commissioner of Internal Revenue and the United States Tax Court have taken the view that antivivisectionist activities are not entitled to preferred tax status, but the situation has been confused since 1933 when one of the United States Circuit Courts of Appeal overruled the Tax Court, which had upheld the commissioner in disallowing a tax deduction claimed for a gift made to an antivivisectionist group. The Court found no precedent for its decision in American law, but relied on an English case decided in 1895. The English case has been explicitly rejected recently and reversed by the highest British court, and it would seem that the underpinning of this single United States decision has been removed. Nevertheless, a clarification of the point probably awaits a new presentation of the issue to a high federal court.

Antivivisection societies have been moderately successful in securing the enactment of laws and ordinances harmful to medical research. Thus seven states (Illinois, Maine, Massachusetts, Oklahoma, Pennsylvania, South Dakota and Washington) have adopted laws which place a definite stigma on animal experimentation. The general import of these laws is a prohibition of animal experimentation in the public schools of the state, although the laws are ambiguous and at times conflict with the provisions exempting animal experimentation from the cruelty to animal laws.

Moreover, in some of our cities antivivisectionist groups have secured control of the dog pound. In these cities and others, animals are denied to the medical and biologic research and teaching institutions by ordinances which make mandatory the execution of all unclaimed impounded dogs. Obviously these restrictions are a serious handicap to medical progress.

Since handicaps to medical research under state laws would restrict the useful expenditure of funds for scientific research in that area, those in charge of the National Science Foundation Bill in Congress might well consider including provisions that those states with laws unfavorable to medical research in this respect should receive commensurately less federal funds. This principle of fund allocation is well recognized in federal and state grants-in-aid programs in other fields.

Frequently the antivivisectionists cite the English Law of 1876 as practically prohibiting animal experimentation in that country. This claim is untrue, because all types of animal experimentation performed in the United States may be conducted in England. English investigators must be licensed and are responsible for certain records. Importantly, however, the administration of this law is in the hands of medical practitioners.

LEGISLATION IMPLEMENTING THE RESULTS OF MEDICAL RESEARCH

When the health and welfare of society require legislation based on recent advances in medical knowledge, that legislation usually is forthcoming. Thus our numerous federal, state and local public health and welfare laws are periodically subjected to revision. Recent examples include laws dealing with premarital examination, flour and bread enrichment and antepartum serologic testing. Moreover, the United States Pharmacopeia is revised every ten years. However, some states should modernize their pure food, drug and cosmetic laws, and many states do not have compulsory pasteurization laws. As yet, the statutes of a few states accept the scientific evidence of the blood-grouping tests.

FUTURE LEGISLATION FOR THE PROTECTION OF MEDICAL RESEARCH

Medical and biologic scientists must not be content with preventing the passage of antivivisection legislation; they must seek the enactment of positive legislation favoring medical research. The National Society for Medical Research is achieving signal success in its program of informing the public relative to (1) the benefits of medical and biologic research and teaching and (2) the necessity, humane character and accomplishments of animal experimentation. The informed public and legislative opinions being created by the research society constitute a facility for the enactment of legislation favorable to animal experimentation.

Since direct legislative activity by the society is prohibited by its constitution and federal tax laws, local and state groups of medical and biologic scientists must work for the establishment of specific legislative recognition and support of medical research and animal experimentation.

The National Science Foundation Bill now before the Congress should receive the active support of all medical scientists and practicing physicians. Each state should follow the splendid example of Michigan and New York in enacting a law specifically recognizing and approving medical research and animal experimentation by properly qualified persons and institutions. The statutes of each state should enable its medical and biologic research and teaching institutions to utilize condemned, unclaimed, impounded animals for the advancement of medical and biologic knowledge and the welfare of man and animals. The first state pound law was enacted in Minnesota in March 1949.

Sarcoidosis.—As this study progressed, there emerged a histologic pattern which was adopted as the criteria for the pathologic diagnosis. . . . Discrete epithelioid granulomas make up the lesions. Usually these occur in lympho-reticular tissue, but lung, liver, skin, bone and other organs are not infrequently involved. The characteristic granulomas tend to occur in clusters or "crops" of tubercles of the same stage of development, resulting in a pattern best described as monotonous. At all stages of development these granulomas preserve individual outlines, and only in the final healing stages of fibrosis and hyalinization do they merge and become blurred.

The youngest granuloma is sharply delimited from the surrounding tissue and is composed of uniform, polyhedral cells with abundant, acidophilic cytoplasm and large, ovoid, vesicular nuclei. As the lesion matures, a narrow rim of 2 or 3 layers of fibroblasts encircle it while the epithelioid cells elongate and become concentrically arranged. Regression by fibrosis then occurs, beginning as a fibrotic process between and around the individual granulomas. The fibrous tissue rapidly becomes compact, hyalinizes and forms a dense scar in which only a suggestion of the previous tubercle remains.—Walter Ricker, M.D., and Mardelle Clark, A.B., Army Institute of Pathology, Washington, D. C., and the Department of Pathology of the University of Washington School of Medicine, Seattle, *American Journal of Clinical Pathology*, August 1949.

NEUROSYPHILIS TREATED WITH PENICILLIN

Report of 140 Cases

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Since the original report of Mahoney that syphilis had been successfully treated with penicillin, the management of neurosyphilis has been studied by many workers. The general trend has been a fairly revolutionary one in the direction of simplifying the treatment. Some workers advocate omitting fever in the management of neurosyphilis and some indicate that the addition of fever is useful. The use of arsenical and bismuth compounds in conjunction with penicillin salts has generally been discontinued. Since 1944 my associates and I have studied the effect of penicillin on neurosyphilis by various technics designed to determine what elements of treatment are useful and which can be safely abandoned. Even with a fairly large material, such a study must progress slowly, because the disease is one in which partial remissions often occur and relapses, even during treatment, are frequent. Numerous reports in the literature have dealt with this problem in the last five years. These reports are usually concerned with groups of patients showing various manifestations of the disease, many of whom are in the so-called asymptomatic group.

THE LITERATURE

The earliest report on the use of penicillin in neurosyphilis was that of Stokes and his co-workers.[1] It appeared in 1944 and described early results in 122 cases of neurosyphilis of various types. Treatment was by intramuscular injection only. The results showed "a favorable trend in the evidence pointing to genuine and indeed rapid good effect on the disease process."

In 1945 Gammon and his co-workers[2] reported the effect of penicillin in neurosyphilis as evidenced in the blood and the spinal fluid. Their report indicates that the greatest early effect is on the cell and protein content of the spinal fluid. The serologic changes were more difficult to influence, and higher dosage schedules seemed to influence the spinal fluid changes more.

The report of Rose[3] regarding the results obtained in 140 cases of symptomatic neurosyphilis was pessimistic, since a relatively small proportion of the patients of long standing improved. Also, the serologic changes in his patients took place slowly.

Rose and his co-workers[4] in a later report in 1945 indicated that there was definite benefit in 28 of 70 patients, with the greatest improvement in 25 of 49 who had dementia paralytica ("general paresis"). Other forms of neurosyphilis were less favorably affected. According to this group of observers, penicillin therapy offered the advantage of relative safety with a shorter period of treatment.

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[1] Stokes, J. H., and others: The Action of Penicillin in Late Syphilis, Including Neurosyphilis, Benign Late Syphilis and Late Congenital Syphilis: Preliminary Report, J. A. M. A. **126**: 73 (Sept. 9) 1944.

[2] Gammon, G. D., and others: Penicillin in Neurosyphilis: Effect on Blood and Spinal Fluid, J. A. M. A. **128**: 653 (June 30) 1945.

[3] Rose, A. S.: Penicillin Treatment of Neurosyphilis, Connecticut State M. J. **9**: 522, 1945.

[4] Rose, A. S., and others: Penicillin Treatment of Neurosyphilis: A Preliminary Report of Seventy Cases Followed from Four to Twelve Months, Am. J. Syph., Gonor. & Ven. Dis. **29**: 487, 1945.

Callaway and his co-workers[5] reported the electroencephalographic abnormalities of neurosyphilis and the changes of these following administration of penicillin.

I[6] reported an early series of cases of neurosyphilis in which fever therapy was used in addition to the treatment with penicillin and the technic of intrathecal administration of penicillin was described. Very favorable early results were observed in a significant proportion of the cases.

Callaway and his co-workers,[7] in 1946, reported preliminary observations of 100 unselected patients with diversified neurosyphilitic manifestations, a large proportion of whom showed favorable results. Their article distorts the meaning of my initial report in discussing the intrathecal use of penicillin as a dangerous procedure and referring to 2 patients who died within ten days of its use, although it was specifically stated by me that these 2 patients were practically moribund before any treatment was started and were used simply as an index of the great tolerance that even such patients have for penicillin injected intramuscularly or intrathecally.

Stokes and his group,[8] in 1946, reported the results of using penicillin alone in 283 patients, of whom 97.9 per cent returned for observation over periods of four months to two years. This was a mixed group of patients with varying forms of neurosyphilis. Higher doses of penicillin were somewhat more effective, although the difference was not great, according to these authors. The results of the treatment as evidenced in blood and spinal fluid findings were reported in detail. They indicate that "in asymptomatic neurosyphilis, penicillin ranks far above other methods as a reducer of the spinal fluid to or toward normal."

Weickhardt[9] reported using penicillin for "general paresis" in 5 patients. The intrathecal routine alone was used. Four of the patients showed undoubted benefit, the fifth met with an accidental death shortly after the treatment. The author's protocols indicate that he used large doses of penicillin intrathecally, 100,000 units on repeated occasions. He felt that gradual elevation of the dose rendered the injections relatively harmless since no severe reactions were encountered. This is an important report, the significance of which should not be minimized.

Koteen and associates,[10] reported the results obtained in a group of 111 patients with various forms of neurosyphilis. Favorable results were noted in a significant proportion of the patients. The authors stated that "if significant clinical and cerebrospinal fluid improvement has failed to appear within 3 months . . . additional treatment, preferably fever, should be administered promptly."

Heyman[11] reported the results observed in 141 patients. Various types of neurosyphilitic patients were included. He concluded that "in late symptomatic neurosyphilis penicillin does not replace fever therapy as the treatment of choice." He further stated that the safety of penicillin therapy and the frequent dramatic results obtained warrant the use of penicillin in earlier and milder forms of this condition. It is noted that only 7 cases of dementia paralytica ("paresis") and 4 cases of tabes dorsalis were included in this series.

Curtis and associates[12] reported on 118 patients observed for a minimum of one year. Seventy-five were treated with penicillin alone, and 43 received penicillin and malarial fever combined. These authors reported that the combined therapy gave better results in both clinical and spinal fluid improvement than penicillin alone in spite of the fact that the patients with more severe involvement were treated with the combined therapy.

Dattner and co-workers[13] reported the results of penicillin treatment of 151 patients with various forms of neurosyphilis. They considered that 90 per cent of the patients responded satisfactorily and that the clinical improvement compared favorably with that following use of malaria. They stated, ". . . we believe that penicillin will ultimately replace fever therapy." This was an altogether optimistic report.

Bennett and Hargrove[14] reported on a small group of patients. They expressed the belief that the results noted in penicillin-fever treated patients did not equal those in patients treated with fever, bismuth compounds and oxophenarsine hydrochloride (mapharsen®). Their report was less optimistic than those of other authors.

Martin[15] reported a small group of cases from Great Britain in which favorable results were obtained.

Weickhardt[16] reported on 100 patients with dementia paralytica ("general paresis") who were followed for periods of six months to two years. No significant difference was found in the results obtained with penicillin alone and with concurrent malaria and penicillin therapy. Penicillin was considered to be of definite value in the treatment of neurosyphilis of this type.

Chesney and Reynolds[17] treated tabes dorsalis with penicillin and with penicillin combined with malaria. The combined therapy was much more effective in producing clinical as well as spinal fluid improvement. Penicillin alone was considered "superior to therapy of the pre-penicillin era only in respect to its convenience and relative lack of toxicity."

Scully and his group[18] reported studies of serologic response in 213 cases of late symptomatic neurosyphilis observed for periods of six to twenty-four months. They found that seronegativity was achieved in less than 10 per cent. There was no correlation between cerebrospinal fluid and blood responses. These workers expressed the belief that fluctuations were to be expected in serologic titer following penicillin therapy in late symptomatic neurosyphilis and that penicillin has added nothing to the physician's armamentarium for changing the positive serologic reaction to negative in late symptomatic neurosyphilis.

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[5] Callaway, J. L., and others: Electro-Encephalographic Findings in Central Nervous System Syphilis Before and After Treatment with Penicillin, J. A. M. A. **129:** 928 (Dec. 1) 1945.

[6] Goldman, D.: Treatment of Neurosyphilis with Penicillin: A Preliminary Report, J. A. M. A. **128:** 274 (May 26) 1945.

[7] Callaway, J. L., and others: The Use of Penicillin in the Treatment of Syphilis of the Central Nervous System: A Report of One Hundred Patients, Am. J. Syph., Gonor. & Ven. Dis. **30:** 110, 1946.

[8] Stokes, J. H., and Steiger, H. P.: Penicillin Alone in Neurosyphilis, J. A. M. A. **131:** 1 (May 4) 1946.

[9] Weickhardt, G. D.: Intrathecal Administration of Penicillin in General Paresis, Am. J. Syph., Gonor. & Ven. Dis. **30:** 235, 1946.

[10] Koteen, H., and others: Penicillin Therapy in Neurosyphilis, Am. J. Syph., Gonor. & Ven. Dis. **31:** 1, 1947.

[11] Heyman, A.: The Treatment of Syphilis of the Central Nervous System with Penicillin, Am. J. M. Sc. **213:** 661, 1947.

[12] Curtis, A. C., and others: Neurosyphilis Treatment with Penicillin Alone and with a Combination of Penicillin and Malaria, Am. J. Syph., Gonor. & Ven. Dis. **31:** 618, 1947.

[13] Dattner, B.; Kaufman, S., and Thomas, E. W.: Penicillin in Treatment of Neurosyphilis, Arch. Neurol. & Psychiat. **58:** 426 (Oct.) 1947.

[14] Bennett, A. E., and Hargrove, E. A.: Role of Penicillin and Fever Therapy in Neurosyphilis, Dis. Nerv. System **8:** 331, 1947.

[15] Martin, J. P.: The Treatment of Neurosyphilis with Penicillin, Brit. M. J. **1:** 922, 1948.

[16] Weickhardt, G. D.: Penicillin Therapy in General Paresis, Am. J. Psychiat. **105:** 63, 1948.

[17] Chesney, L. P., and Reynolds, F. W.: Penicillin in Treatment of Neurosyphilis: IV. Tabes Dorsalis, Arch. Neurol. & Psychiat. **59:** 347 (March) 1948.

[18] Scully, J. P., and others: The Serologic Response in Penicillin-Treated Symptomatic Neurosyphilis, Am. J. Syph., Gonor. & Ven. Dis. **32:** 224, 1948.

Wong and Packer[19] reported on a group of patients treated with penicillin and with penicillin combined with malaria. No significant advantage was evident in the way of improvement of spinal fluid, of serologic tests or of clinical manifestations from the addition of malaria. Generally favorable clinical results were obtained.

Parkhurst and Bowman[20] reported on their experience in treating a large number of patients for neurosyphilis. By studying failure rates, they concluded that penicillin "is as effective as the Kettering hypertherm and malaria in the treatment of neurosyphilis." They contended that penicillin eliminates activity in the spinal fluid more rapidly than does physically induced fever or malaria in that the positivity of the Kolmer reaction is reduced in a greater proportion of cases at the end of eighteen months with penicillin than with malaria or hyperthermy treatment. The clinical results were not stressed in this paper.

Rose and Solomon[21] and Rose[22] have published yearly critical reviews of the literature of neurosyphilis. In the most recent of these a significant plea was made for consideration of the patient rather than the laboratory results.

TABLE 1.—*Comparison of Results of Various Older Therapies*

Kind of Treatment	Patients Out of Hospital			Patients in Hospital			Patients Who Died Within 2 Years
	Recovered	Improved	Unimproved	Recovered	Improved	Unimproved	
Untreated (125)	2	1	2	..	1	6	113—90.4%
Bismuth compounds only (44)	..	7	..	..	..	..	37—84.1%
Arsenical preparations only (277)	16	37	2	..	55	55	112—40.4%
Malaria with arsenical and bismuth compounds (513)	59	151	6	1	101	75	120—23.4%
Fever (old technic) with arsenical and bismuth compounds (127)	6	30	3	..	36	19	33—26.0%
Fever (new technic) with arsenical and bismuth compounds (213)	19	53	4	..	71	30	36—16.9%
Totals	102	279	17	1	264	185	451—35.0% Approx.

THE PRESENT STUDY

The present report deals chiefly with a group of 140 patients whose neurosyphilis was of uniformly severe character and who were sufficiently ill to be committed to a state hospital. All had strongly positive results from tests of blood and spinal fluid and "paretic" colloidal gold curves. About two thirds of these patients had received some form of treatment, for the most part inadequate. Such a group of patients represents a sharper test of the efficacy of various forms of treatment than a variegated group consisting chiefly of patients with asymptomatic and mild syphilis.

As a base line for comparison, the results in a large group of patients treated by intensive use of arsenical and bismuth compounds and fever, the fever being produced both with malaria and with electromagnetic induction, are presented in table 1. This table presents patients of similar severity of syphilis and similar laboratory findings for the most part, so that the comparison of the results obtained with penicillin and with these older therapies is both useful and valid.

The important elements of the treatment which we have thus far studied are: (1) intramuscular injections of soluble salts of penicillin; (2) intraspinal injections of soluble salts of penicillin; (3) the use of fever in addition to penicillin; (4) the use of deposits of penicillin suspended in peanut oil and beeswax; (5) the use of bismuth therapy and the penicillin technic combined. We are not as yet reporting the use of any other combination of the penicillin technic. Serial laboratory observations were made on all patients. In addition, a group of 50 patients was subjected to psychologic tests which served to indicate more sharply the course of improvement. The tests used were the components of the Wechsler-Bellevue test for adult intelligence. These were administered by Miss Jane Kocher under the direction of Dr. T. Brown of the psychology department of Longview State Hospital. The clinical effect of the treatment was followed in all patients for not less than one year, except of course in the patients who died.

RESULTS

1. *Intramuscular Injections of Soluble Salts of Penicillin Combined with Fever Treatments.*—This type of treatment was given in the early period of our use of penicillin. Most of the patients received what would now be considered relatively small doses of penicillin, from 1,500,000 to 2,000,000 units (U. S. P.), the administration of which was usually divided into two courses approximately four weeks apart. A few received 4,000,000 units, the administration similarly divided into two courses. The first course was concurrent with a series of fever treatments, which were usually started before the penicillin therapy was initiated. In this way, the third to the sixth fever treatments, approximately, were given during the course of the penicillin therapy, so that the combined effects of the two types of treatment were obtained. Fever was given by means of the inductotherm with insulating blankets. Individual sessions of two to three hours of temperature above 105 F. were administered every other day to a total of about thirty hours of temperature above 105 F. Eleven patients are recorded in this group. Seven of these are out of the hospital; 5 are considered recovered and 2 much improved. Three remain in the hospital, 1 much improved, 1 slightly improved and 1 deteriorating, and 1 died within two years of the treatment. This was a group of patients who were physically capable of withstanding the rigors of fever therapy. These have all been followed for more than three years.

2. *Intramuscular Injections Combined with Intraspinal Injection of Soluble Salts of Penicillin.*—This group of patients is divided approximately equally between those who received less than 2,500,000 units and those who received more than 2,500,000 units of penicillin intramuscularly, both with the addition of intraspinal injections of salts of penicillin as described under the following heading. The intramuscular injections were divided usually into two courses about thirty days apart. The intraspinal injections were started concurrently with the first day of intra-

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[19] Wong, Y. T., and Packer, H.: Penicillin Versus Penicillin-Malaria in the Treatment of Dementia Paralytica, Am. J. Syph., Gonor. & Ven. Dis. **32**: 212, 1948.

[20] Parkhurst, G. E., and Bowman, R. W.: Treatment of Neurosyphilis at Hot Springs Medical Center, Arkansas, J. Ven Dis. Inform. **29**: 159, 1948.

[21] Rose, A. S., and Solomon, H. C.: Neurosyphilis (Yearly Review), Am. J. Psychiat. **103**: 524, 1947; **104**: 470, 1948.

[22] Rose, A. S.: Neurosyphilis (Yearly Review), Am. J. Psychiat. **105**: 517, 1949.

muscular injections. The penicillin was administered intramuscularly in doses of 15,000 to 50,000 units every three hours in the usual manner. The two subgroups comprising those receiving less and those receiving more than 2,500,000 units of penicillin intramuscularly showed no difference in therapeutic results. The neurosyphilis of these patients was of maximum severity. An appreciable number were practically moribund when admitted to the hospital. This is reflected in the high death rate—which is not to be atttributed to the penicillin, as it is strictly the result of the disease process. Eighteen of the patients are out of the hospital; 14 remain in the hospital, 3 much improved, 7 improved to some degree and 4 deteriorating. Thirteen of the total group died within two years. Many of the patients were in too poor condition to be treated with fever. This group is therefore not comparable to any of the groups capable of receiving fever therapy.

3. *Intraspinal Injections of Salts of Penicillin.*—For strictly investigative purposes, 10 patients were given penicillin intraspinally only—to determine whether this had any effect on the disease process. The report of Weickhardt on such management, as well as our own previous report, indicates such treatment is effective.

Our own regimen is a much milder one than that reported by Weickhardt. The technic used was as follows: Ten thousand units of penicillin was given intraspinally on two successive days and then 20,000 units on successive days for nine more days. It is most important in our opinion that the penicillin be adequately diluted so that the volume injected is in a concentration of not over 1,000 units per cubic centimeter. This is accomplished by withdrawing spinal fluid into the syringe containing the penicillin solution so that a volume of at least 20 cc. is obtained. This is then mixed by inverting the syringe several times. The penicillin diluted in spinal fluid is then injected moderately slowly. The large volume of solution, we believe, is useful in effecting a more widespread distribution of the penicillin inside the meningeal membrane. A total of 200,000 units of penicillin administered over a period of eleven days is all the treatment these patients received. It is an interesting fact that 6 of the 10 patients are now out of the hospital much improved, 2 remain in the hospital improved in varying degrees, and 2 have died. These 2 were patients with severe illness; thus survival with any regimen would have been questionable. The results in this group, interestingly enough, are somewhat better than those obtained with malaria and heavy metal therapy in similar patients, as indicated by a study of the results in over 500 malaria-treated patients of the prepenicillin era in our hospital (table 1).

TABLE 2.—*Comparison of Various Penicillin Technics*

	Patients Out of Hospital		Patients in Hospital				
Kind of Treatment	Recovered	Much Improved	Much Improved	Slightly Improved	Unimproved	Died Within 2 Years	Totals
Intramuscular penicillin with fever	5	2	1	1	1	1	11
Intramuscular and intraspinal penicillin	8	10	3	7	4	13	45
Intramuscular and intraspinal penicillin with fever	3	10	3	8	3	5	32
Intraspinal penicillin only	0	6	1	1	0	2	10
Intramuscular *P.O.B.* and intraspinal penicillin with fever*	1	4	4	4	2	2	17
Intramuscular P.O.B. and intraspinal penicillin with fever and bismuth compound	4	6	4	4	4	3	25
Totals	21	38	16	25	14	26	140

* P.O.B. stands for deposit penicillin.

4. *Intramuscular Injections of Soluble Salts of Penicillin Combined with Fever Sessions and Intraspinal Injections of Soluble Salts of Penicillin.*—This group comprises patients whose neurosyphilis was of average institutional severity. The patients were considered capable of surviving fever treatment. All received approximately 4,000,000 units of penicillin intramuscularly plus fever and intraspinal injections of salts of penicillin as described in the foregoing section. Thirteen of these patients are out of the hospital recovered or much improved, with improvement still progressing. Eleven patients remain in the hospital more or less improved, and 3 are unimproved. Five died within two years. These figures compare favorably with the older type of treatment, which was more prolonged and costly.

5. *Intramuscular Deposit of Penicillin (Peanut Oil and Beeswax Plus Calcium or Procaine Penicillin G) Combined with Fever and Intraspinal Injections of Soluble Salts of Penicillin.*—This group is similar to the previous one. Treatment was carried out in a similar manner except that instead of soluble salts of penicillin being injected at the rate of 40,000 units of penicillin every three hours, 300,000 units of penicillin in the form of the calcium or the crystalline procaine salt of penicillin G in oil and wax was deposited intramuscularly once daily in a single course to a total of 3,600,000 units. The fever and intraspinal penicillin technic were the same as those described for group 4. Of the present group, 5 patients are out of the hospital recovered or much improved; 8 remain in the hospital much or slightly improved; 2 are in the hospital unimproved, and 2 died within two years. This group represents possibly some improvement over the previous technic, although the number of patients is somewhat small.

6. *Intramuscular Deposit of Penicillin Combined with Intraspinal Use of Penicillin and Fever and Followed by Intramuscular Injections of a Bismuth Compound.*—This group is similar to the previous one and was treated in exactly the same manner except for the addition of two courses of injections of bismuth sodium thioglycollate (thio-bismol®). The bismuth treatment was started immediately after the administration of penicillin was finished. The injections were given twice weekly to a total of 20 injections of 0.2 Gm. each. The second course was given after an interval of four to six weeks. Of this group, 10 are out of the hospital recovered or much improved; 8 remain in the hospital much improved or slightly improved; 4 remain in the hospital unimproved, and 3 died within two years of the beginning of treatment. This group, it is believed, clearly represents further improvement in results.

LABORATORY FINDINGS

Laboratory findings are summarized in table 3. The results of tests of blood and spinal fluid and the spinal fluid colloidal gold curve are indicated here. In spite of the opinion of other authors that the cell count and the protein content of the spinal fluid are the most important indexes of activity of the syphilitic infection, we believe that these are so susceptible to even the most inadequate treatment that they can hardly be used as a key to therapeutic results. In patients whose dementia paralytica was of such long standing as that of this group, it is hardly to be expected that a great deal of improvement will take place in serologic results short of two to five years, according to the large experience with the older form of treatment. Of these major tests, that which is most susceptible to penicillin is the colloidal gold curve. This is in agreement with the results of other authors. It is apparently indicated in the figures that the intraspinal use of penicillin and fever both have a favorable effect on the spinal fluid findings. It is believed, however, that the laboratory findings cannot form a reliable indicator of the status of the patient.

TABLE 3.—*Laboratory Findings at One Year*

Kind of Treatment	Patients Followed	No. with Negative Blood*	No. with Negative C.S.F.*	No. with Diminished Gold Precipitation
Intramuscular penicillin with fever..	11	1	1	4
Intramuscular and intraspinal penicillin..............................	29	3	2	10
Intramuscular and intraspinal penicillin with fever....................	17	1	2	10
Intraspinal penicillin only............	5	1	0	1
Intramuscular P.O.B. and intraspinal penicillin with fever.................	9	1	1	3
Intramuscular P.O.B. and intraspinal penicillin with fever and bismuth compound..........................	17	4	0	12
Totals..............................	88	11	6	40

* Tests of blood and cerebrospinal fluid for evidence of syphilis gave negative results.

TABLE 4.—*Psychologic Studies: Improvement on Wechsler-Bellevue Test from Beginning to Test Nearest One Year After Beginning (Total, 36 Patients)*

Status	Patients Showing Given Status		
	Full Scale	Performance	Verbal
Worse..............................	0	1	2
No change..........................	8	8	9
1-5 points improved..............	3	3	7
6-10 points improved.............	6	3	3
11-25 points improved............	14	14	12
26 and over points improved.....	5	7	3

TABLE 5.—*Psychologic Studies: Period of Greatest Improvement on Wechsler-Bellevue Test*

Period	Patients
0-3 mo..	0
3-6 mo..	8
6-9 mo..	11
9-12 mo..	8
Over 12 mo......................................	9

PSYCHOLOGIC TESTS

Psychologic tests are a reliable index of the mental status of the patient and are to be regarded as the best criterion of the efficiacy of treatment. This is possibly a radical departure from previous ideas of the treatment of syphilis, but in the treatment of dementia paralytica the patient himself should be of more interest than any index of the viability of the spirochete of syphilis or the immunologic content of the body fluids. In our study the Wechsler-Bellevue test for adult intelligence was used. The patients were often unable to manage some of the subtests, particularly in the early period of treatment. Follow-up tests are reported for 36 patients at the end of one year (tables 4, 5, 6 and 7. These tables indicate various phases of the psychologic improvement. Of the 36 patients studied completely, 28 showed improvement. Nineteen of these showed full-scale improvement of more than 10 points (table 4). The importance of the various subtests is indicated in tables showing the number of patients who revealed improvement in the subtests, and the rank order of the amount of improvement in each of the subtests. The greatest improvement is shown to have occurred after six months from the time of treatment in most patients (table 5). This long interval before appreciable recovery takes place must be emphasized. It is true for all forms of treatment of dementia paralytica, and that seems too infrequently appreciated by workers in this field. Some individual protocols are given in tables 8, 9, 10, 11 and 12, representing patients who improved moderately or little. Table 10 shows the protocol of a patient whose improvement was unquestioned until approximately forty-three days before his death. He then became disturbed, and the only successful test during the period of disturbance showed a decided drop in both performance and verbal scores. This was obviously a sharper index of the patient's condition than the laboratory tests, which had not shown appreciable response except that the cerebrospinal fluid cell count and protein level had returned to normal.

TABLE 6.—*Psychologic Studies: Comparative Improvement After One Year in Wechsler-Bellevue Subtests (Total, 36 Patients)*

Subtest	Patients Improved
Picture completion..............................	33
Object assembly.................................	32
Digit symbol......................................	31
Block design......................................	30
Digits forward and backward................	28
Picture arrangement............................	28
Information..	27
Comprehension...................................	26
Similarities and differences..................	26
Arithmetic..	19

TABLE 7.—*Psychologic Studies: Rank Order of Improvement in Wechsler-Bellevue Subtests*

Rank	Subtest
1..	Obj. ass.
2..	Pic. com.
3..	Blk. des.
4..	Dig. sym.
5..	Digits
6..	Pic. arr.
7..	Compre.
8..	Info.
9..	Simil.
10..	Arith.

COMPLICATIONS ARISING FROM THE USE OF PENICILLIN

Complications are notable for their low frequency. Less than 5 per cent of the patients showed allergic reactions; in the earlier patients of the series these were somewhat more frequent, but since crystalline penicillin has been available, such reactions are rare. Occasional instances of angioneurotic edema and a few of urticaria or morbiliform eruptions were seen. None of these reactions lasted more than one week, and none was considered important. A notable increase of the cell count of the spinal fluid regularly followed the use of penicillin intraspinally with few exceptions. The increase usually began to diminish even before the intraspinal administration of penicillin was stopped and disappeared within thirty days in almost all instances. In the earlier patients febrile reactions occurred fairly frequently after penicillin had been injected intramuscularly and intraspinally, but such reactions have also diminished in frequency, almost to the vanishing point, since crystalline penicillin was used. Both the potassium and the sodium salts of penicillin have served for intraspinal injection. There is no detectable difference in effect.

TABLE 8.—*Psychologic Studies: An Individual Protocol*

Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Obj. ass.	..*	..	..	..	..	8	8	11	12	12	9	11	9	10	8	7	10	8	6	9	8	10	10	9
Pic. com.	..	..	..	..	..	1	4	4	4	2	6	4	4	4	7	7	7	7	7	7	6	7	7	7
Blk. des.	..	..	..	..	..	3	5	7	7	7	8	4	5	5	7	3	8	7	7	5	6	6	7	8
Dig. sym.	..	..	..	..	..	9	11	10	11	12	7	9	8	7	8	7	7	6	6	9	7	6	8	7
Digits	..	6	6	10	10	10	7	10	12	11	9	7	9	10	11	9	10	11	7	10	10	10	9	9
Pic. arr.	..	..	..	..	..	6	7	8	4	3	6	6	6	6	7	7	6	4	6	6	4	6	7	3
Compre.	0	0	0	2	0	5	7	5	5	3	5	6	7	6	5	5	6	5	4	7	5	5	7	7
Info.	10	12	8	10	11	11	11	11	12	12	13	12	12	13	13	13	13	11	11	11	12	13	13	13
Simil.	..	2	1	3	5	9	8	6	8	10	11	11	10	9	9	8	10	10	8	10	8	10	8	10
Arith.	..	6	3	7	9	9	9	13	10	13	13	7	7	9	7	10	6	10	6	10	9	9	13	12
Full I. Q.	..	..	..	..	..	91	95	100	100	99	100	94	94	97	98	94	99	96	90	99	94	98	103	100
Performance	..	..	..	..	..	85	94	101	98	94	96	93	91	91	94	90	98	91	91	96	90	94	99	93
Verbal	..	79	69	86	89	99	97	98	103	104	105	97	99	104	102	101	101	103	91	103	99	103	106	107
													Days											
Time from 1st test...	..	14	29	44	57	83	98	101	116	130	144	160	175	186	203	217	231	244	258	274	286	302	313	326

* Blanks indicate that the patient was too disturbed to be tested.

TABLE 9.—*Psychologic Studies: An Individual Protocol*

Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Obj. ass.	3	4	7	7	8	7	..*	8	11	11	8	..	10	8	7	..	10	7
Pic. comp.	1	1	1	1	4	4	..	4	4	3	4	..	3	3	3	..	4	3
Blk. des.	1	1	1	1	1	1	..	1	3	1	1	..	1	1	1	..	1	1
Dig. sym.	0	0	1	0	0	0	..	0	0	1	1	..	0	0	0	..	2	0
Digits	0	4	2	0	0	0	0	0	0	0	0	..	0	2	4	5	4	0
Pic. arr.	1	1	1	1	4	4	..	4	4	3	4	..	3	3	3	..	4	3
Compre.	3	1	2	0	1	0	2	1	1	3	4	0	3	1	0	2	1	1
Info.	4	4	3	3	3	4	4	3	4	4	4	3	5	4	4	4	4	4
Simil.	1	2	2	1	2	2	1	2	1	2	2	..	1	2	2	1	2	1
Arith.	1	1	0	0	0	0	0	0	0	1	3	..	0	0	0	0	1	1
Full I. Q.	53	56	57	52	60	57	..	57	57	62	65	..	61	66	59	..	66	58
Performance	48	56	62	58	71	66	..	65	73	71	72	..	68	78	63	..	76	66
Verbal	58	62	58	54	55	55	56	55	55	60	63	..	58	58	60	62	62	56
										Days								
Time from 1st test	46	46	56	70	84	99	116	125	139	153	167	181	195	209	225	254	279	307

* Blanks indicate that the patient was too disturbed to be tested.

TABLE 10.—*Psychologic Studies: An Individual Protocol*

Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Obj. ass.	7	8	8	12	13	10	14	12	14	13	13	13	14	..*	12
Pic. comp.	7	6	7	8	7	7	8	8	8	8	8	8	8	..	7
Blk. des.	3	7	6	7	7	7	7	7	7	7	7	7	8	..	5
Dig. sym.	6	5	7	8	8	9	10	11	11	12	13	12	10	..	4
Digits	7	6	6	8	10	9	10	10	11	11	11	10	7	..	0
Pic. arr.	6	6	4	6	9	11	11	12	12	15	15	13	17	..	4
Compr.	7	7	5	6	8	9	7	7	8	9	8	10	7	..	6
Info.	11	11	11	10	10	10	11	11	11	13	12	11	12	..	10
Simil.	3	3	2	5	6	5	6	5	7	9	8	8	8	..	8
Arith.	3	3	1	6	9	6	9	9	9	9	7	10	9	..	0
Full I. Q.	84	86	83	94	101	99	105	104	108	113	109	111	110	..	82
Performance	86	91	91	102	105	105	112	112	115	118	116	116	121	..	91
Verbal	85	84	78	89	98	94	98	97	102	107	102	105	98	..	77
								Days							
Time from 1st test	15	31	42	55	69	85	98	111	130	142	153	164	174	192	200

* Blanks indicate that the patient was too disturbed to be tested. This patient died seventeen days after the last test.

The penicillin treatment lends itself particularly to application in patients who have dementia paralytica with a severe complication, such as tuberculosis. This renders the patient unsuitable for fever treatment. The older types of intravenous and intramuscular therapy are much less efficacious without fever than is penicillin therapy, so that for such patients penicillin is often life saving, since improvement in the syphilitic condition makes possible adequate treatment of tuberculosis.

OTHER MANIFESTATIONS OF NEUROSYPHILIS TREATED WITH PENICILLIN

In a previous report[6] the results of using intraspinal injections of salts of penicillin alone for persistent symptoms of irritation of spinal sensory roots were recorded. Since then, more patients with manifestations of spinal nerve root involvement have been treated. Two additional patients with lightning pains and tabetic crises have been treated, with brilliant and permanent results. These patients had previously been subjected to sufficient treatment to render blood and spinal fluid normal and to clear other manifestations of the disease, yet the sensory root symptoms persisted over a period of years until the patients were treated with penicillin intraspinally. Four patients suffering from incontinence of urine associated with neurosyphilis recovered bladder control of normal degree following intraspinal injections of salts of penicillin as outlined previously. Three patients with advanced optic atrophy whose vision was less than 20/200 were treated with penicillin intraspinally. Two of these patients had been previously treated with fever and either penicillin or bismuth and arsenical compounds, with no benefit. One had had only bismuth and arsenical compounds. The latter patient was given penicillin intramuscularly, concurrently with fever treatments plus intraspinal injections of salts of penicillin. All 3 showed striking improvement in visual acuity. One girl with advanced mental symptoms and apparently total blindness is now able to distinguish forms and is a much easier patient to manage in the state hospital. The remaining 2 are private patients who are capable now of living normal lives with their families. The mental symptoms of these 2 were minimal. It is believed that an important element in the technic of administering penicillin intraspinally in such patients is dilution of the penicillin to a large volume so that the entire neuraxis is bathed in the solution.

TABLE 11.—*Psychologic Studies: An Individual Protocol*

Test no	1	2	3	4	5	6	7	8	9	10	11
Obj. ass	0	0	0	0	2	4	4	5	6	7	10
Pic. comp	0	3	3	4	3	4	4	6	7	6	6
Blk. des	1	1	1	3	3	5	3	4	3	4	4
Dig. sym	0	3	2	5	5	6	6	6	6	6	6
Digits	0	3	6	6	9	4	4	6	4	7	6
Pic. arr	1	4	4	4	1	3	3	4	3	4	4
Compre	0	4	4	3	5	4	4	4	5	4	5
Info	3	6	4	6	8	10	8	8	10	9	9
Simil	1	1	2	1	3	3	3	3	3	1	3
Arith	1	1	1	6	7	4	4	9	3	7	9
Full I. Q	51	63	64	71	76	76	72	81	78	81	86
Performance	59	66	65	72	69	79	76	82	82	85	88
Verbal	56	67	69	75	86	78	73	84	78	82	86
	Days										
Time from 1st test	..	14	30	48	59	74	87	102	233	313	385

TABLE 12.—*Psychologic Studies: An Individual Protocol*

Test no	1	2	3	4	5
Obj. ass	7	6	7	5	5
Pic. comp	6	0	2	4	6
Blk. des	3	1	3	5	3
Dig. sym	3	0	2	2	4
Digits	3	0	0	2	0
Pic. arr	1	1	1	3	4
Compre	2	0	0	0	0
Info	1	1	1	1	1
Simil	1	1	1	1	1
Arith	1	0	0	0	0
Full I. Q	65	53	58	61	66
Performance	76	62	70	75	75
Verbal	59	53	53	55	40
	Days				
Time from 1st test	..	20	54	87	302

Ataxia associated with tabes dorsalis has been treated in an additional patient, with definite benefit, and the patient previously reported has shown improvement to the point where he is able to walk without a cane, though previously he required two canes. He has now been gainfully employed for over three years after having been incapacitated for more than five years.

SUMMARY AND CONCLUSIONS

The results in a group of 140 patients treated with penicillin by varous technics are described.

The various technics of administering penicillin intramuscularly and intraspinally and of combining these technics with fever and bismuth therapy, and the results associated with them, are delineated. The most favorable results are apparently obtained by the combination of intramuscular and intraspinal injections of salts of penicillin with fever and administration of bismuth. The intramuscular penicillin is just as effective when given as a single daily deposit of penicillin in oil and wax as when given as multiple injections of a soluble salt of penicillin every three hours.

Laboratory findings are reported. Their importance in evaluating the treatment of this type of patient is limited.

The results of psychologic tests of 36 patients who were followed with such tests at intervals for one year are given in some detail. The data obtained suggested that psychologic tests are probably of more value in following the progress of a patient with dementia paralytica than laboratory tests.

Penicillin is to be considered the safest and most effective means yet available for the treatment of severe neurosyphilis. This is particularly true when intraspinal and intramuscular injections of penicillin salts are combined with fever and bismuth therapy.

It is reasonable to believe that each element of this treatment contributes something to the total effect, since patients treated by means of the separate components benefited greatly but those treated with the combination of all showed the best clinical result and the lowest death rate.

320 Provident Bank Building.

ABSTRACT OF DISCUSSION

DR. GEORGE D. GAMMON, Philadelphia: Dr. Goldman's report of the effect of penicillin and of combined therapy on patients hospitalized for dementia paralytica agrees with those of other observers who have demonstrated the efficiency of penicillin on the severe forms of late neurosyphilis. His table comparing current results with those of the older pretreatment era strikingly reaffirms the progress which has been made. Dr. John Stokes and I, with Drs. F. H. Lewey, H. Dillon and G. Schwarz, recently reported autopsy observations made in 9 cases in which penicillin was tried. The autopsy material consisted of 3 patients with dementia paralytica, associated with meningovascular syphilis in 1 and with tabes dorsalis in 2. In 1 patient, who died three weeks after treatment, the usual histologic features of the disease were present. In the others the striking finding was the minimal inflammatory reaction, which indeed might have cast some doubt on the diagnosis of syphilis had the other characteristic degenerations not been present. There were in addition 2 patients without syphilis whose spinal fluid gave a false positive reaction in tests; one had acute multiple sclerosis, the other cerebral arteriosclerosis. Does this mean that the spirochetes have been destroyed by treatment? One indirect bit of evidence which is in accord with that view emerges from a study of the febrile Herxheimer reaction. Patients with dementia paralytica were selected for analysis on the assumption that since they had more organisms than other types the phenomenon would be more obvious, just as it is in early secondary syphilis. Of 75 patients, 85 per cent had fever (99.5 F.) during the first course of treatment. But on retreatment of 35 of these, only 5 per cent had fever. Such a decline would be expected if there were fewer or no spirochetes present at the time of retreatment. Yet, despite these encouraging indications, many distressing problems remain. One of these is the occasional progression of symptoms, even after reversal of spinal fluid abnormalities. This seems to be true of some cases of optic nerve atrophy and of tabetic pain. The latter undoubtedly is influenced by therapy, but frequent relapses occur and pain is relieved completely in only some 15 per cent of cases. Dr. Goldman's claim of the value of intrathecal penicillin in cases of severe neurosyphilis deserves attention and further exploration. Our own results were not as satisfactory as Dr. Goldman's. I should like to know whether Dr. Goldman encountered progression of symptoms, particularly psychoses, after reversal of spinal fluid abnormalities in cases of dementia paralytica. One such patient in our series had a hallucinatory delusional psychosis, differing completely from her original symptoms, one year after the fluid had become normal.

Dr. John H. Stokes, Philadelphia: The therapy of neurosyphilis was measurably successful before penicillin appeared. As in all phases of syphilis, little treatment sometimes did wonders, and vast and variegated therapeutic effort failed totally in the next case. A treatment potential has not been determined for neurosyphilis because of the lack of a backlog of cases in which the disease was allowed to progress to its ultimate outcome under rigorous observation, untreated. There can be little doubt that spontaneous recoveries, arrests and asymptomatic courses of a lifetime's duration may occur. Even the feared type III spinal fluid formula seems less alarming than one at first thought. Moreover, neurosyphilis is rarely a simon-pure affair in its later and hence more often institutionalized forms. It is complicated by arteriosclerosis, by other organic diseases, by alcoholism, by psychoses, that influence therapeutic results. Still more important, in predicting results and prognosticating statistically, one does not start with a precisely evaluated subject. One has no pretreatment autopsy, so to speak. What may go on inside that skull and spine under treatment with fever, tryparsamide and penicillin can rarely be fully predicted. Deterioration after treatment, the Collins psychic scar, therapeutic trauma such as one now suspects may follow the brash and unprepared use of penicillin in cerebral syphilis, all disconcert and disturb orderly statistical estimates of effects. There has been, therefore, a disposition to fire every gun in the therapeutic battery, lest something not be done that might have been done for the patient. This is a kind of furor therapeuticus, natural enough perhaps, but uncalled for in perhaps 9 out of 10 cases. The 9 patients are subject to the hazards and stresses that only 1 may have required. There is, moreover, an understandable reluctance to give up an older successful procedure in favor of a new-fangled simplification. And there is an institutional disposition to maintain institutional esoteric technics. This is quite right for the 1 case but perhaps unnecessary for the 9. Why then apply the strenuosities and hazards to the 9 patients before the failure of simpler methods proves the individual need for intensification? Why not see what penicillin alone, intramuscularly, will do, first? If I read the literature correctly and interpret our own experience correctly, penicillin alone, by the intramuscular route, is the equal of penicillin plus malaria, serologically and clinically speaking.

Dr. Irving J. Sands, Brooklyn: I recall the methods used in treating these patients when the arsenicals were employed. One used to give them intrathecal arsphenamine according to the Swift-Elis and the Ogelvie methods. In 1915 I used the latter methods, without any benefit to the patients, and occasionally with aggravation of the symptoms, and in some instances there ensued paraplegias and other embarrassing complications. Subsequently arsphenamine was injected intraventricularly, but without any beneficial results. Finally it was administered only intravenously. The same applies to the use of penicillin. Two or three years ago, before this section, cases of meningitis were presented in which penicillin was administered intrathecally with serious neurologic complications. It seems difficult to accept the proposition that intrathecally administered penicillin would reach the spirochetes in the presence of such thick meningeal exudates as are found in these cases. Having followed the methods of treating neurosyphilis for thirty-five years, I am convinced that one may accomplish more by administering the various drugs intravenously than by intrathecal methods, and one avoids the serious neurologic complications that occasionally follow intrathecal therapy. It is my policy to give penicillin intravenously or even intramuscularly for a total treatment dose of 10,000,000 units.

Dr. Roland P. Mackay, Chicago: My own experience leads me to believe that as of this date the best treatment of neurosyphilis, and I mean particularly of dementia paralytica, is the intramuscular use of penicillin with fever therapy. I have tried penicillin alone in many cases and found it ineffective and have been forced to resort to fever. A man with an acute psychosis with a full paretic formula of his spinal fluid also had severe aortic insufficiency. My associates and I were afraid to give this man fever, and even intramuscular injections of a penicillin salt were begun with trepidation. After two weeks of intensive treatment with penicillin, this man, who had not improved, was becoming such a psychiatric problem that, after consultation with his wife, we instituted fever therapy, watching his aorta with fear and trembling. To our amazement, within a week after the occurrence of his first bout of fever, he was playing rummy in the recreation room with his companions. This man got clinically well as far as his psychosis was concerned. We gave him the full allotment of penicillin, but he also had fever. One dare not wait to see whether penicillin will fail before using fever, because in some cases there is no time to spare, and the failure of penicillin means the loss of the patient. Again, those patients in whom fever fails may not be the same as those in whom penicillin fails, so that by administering both one will save a greater number of patients. One had best hold to what was good in the past, as well as adopt what is new. If I may paraphrase Alexander Pope, the rule should be "Be not the last by which the new is tried, Nor yet the first to lay the old aside."

Dr. Douglas Goldman, Cincinnati: In Dr. Gammon's discussion, he mentions some progress of the disease after treatment. This, of course, is characteristic of dementia paralytica in practically any large group of patients. It is just such progress which one may be able to avoid by intensifying the treatment in such severely sick patients as have been discussed here. In that respect, this group is different from any of the other groups that have been reported previously, since the other groups have been chiefly patients from outpatient departments, from private practice and from other noncommitted groups with neurosyphilis. Our patients are severely ill; their disease is progressive and in many cases terminal. The matter of relapses after seronegativity that Dr. Gammon mentions emphasizes the point brought out, that serologic changes in cases of dementia paralytica are of much less importance than clinical observation and perhaps technical psychologic testing of the patients. Certainly, patients with dementia paralytica are apt to undergo hallucinatory episodes a little more readily than patients who have never had this form of neurosyphilis. But they are also able to develop psychoses of all sorts without relation to syphilis, so that a single case report of a hallucinatory episode can hardly be interpretive. Treatment with penicillin in oil and wax is not a casual matter in this series. It is a matter of organized treatment, with this being used in association with the other elements of treatment described. Dr. Stokes's remarks regarding present penicillin treatment are much appreciated. I hardly feel guilty of being a doctor involved in a *furor therapeuticus,* since my colleagues and I are dealing with patients whose disease is of a severity that requires everything that we have; and we do not have time (since within two years over 90 per cent of such patients are dead) to toy with milder forms of treatment which might not be effective. The matter of whether penicillin is able to approach the spirochetes in the presence of gelatinous exudates—the gelatinous exudates are usually not that heavy. We are always able to obtain spinal fluid. Penicillin is one of the most diffusible substances available. The vascular supply to some areas of the brain and parts of the neuraxis is inadequate, and it is only by bathing these areas in penicillin solution submitted through the spinal fluid that some approach of penicillin to the spirochetes can be accomplished. This is particularly so in the cases with such manifestations as sensory root symptoms and optic nerve atrophy.

TREATMENT OF ACUTE RHEUMATIC FEVER AND PREVENTION OF RECURRENCES

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IOWA CITY

Differences of opinion are to be expected regarding the treatment of rheumatic fever and prevention of recurrences until additional knowledge explains the protean manifestations of the disease. One has to admit that no treatment specific for rheumatic fever is known.

Many types and various phases of the disease have been described.[1] In children the chief manifestation of acute rheumatic fever, regardless of clinical type, is carditis. As is well known, an outstanding characteristic of the disease is its tendency to recur. For the purpose of the present discussion I shall divide the disease into five phases: the phase of invasion of the inciting agent, the phase of latency between the invasion and the development of symptoms and signs of the disease, the phase of acute activity, the prolonged phase of subacute activity and the phase of inactivity.

A child with rheumatic fever may come under observation for treatment in any phase of the disease. A detailed medical and social history and a complete examination of the child are essential in order to evaluate the patient as well as the disease. With this information one is in a position to advise the family as to the best place for the child to be treated. When adequate hospital facilities are available, with few exceptions hospital care is indicated, to evaluate the child and his family properly and to help the patient and the family adjust to the situation and plan for the future care of the patient. Although the child is in need of the facilities of the hospital, he is in need also of security, and great care must be taken not to separate him precipitously from his family.

Treatment should be prompt, in the hope of preventing cardiac decompensation and disabling heart disease and of modifying the duration of the attack. Too frequently adequate care is obtained only after the child's condition has become critical because of progressive cardiac involvement. Early treatment and a long range plan of care have proved to be the best safeguards for lowering morbidity and mortality; they also provide an opportunity for the child and his family to obtain professional guidance.

EMOTIONAL CARE

That severe anxiety affects the various physiologic functions of the child is well known. The musculature may be under tension leading to unnecessary expenditure of energy and fatigue; low mood may result in poor appetite; unresolved anxiety may lead to terror dreams and restless sleep. Attention must be paid to the basic sources of anxiety. The child fears, above all else, being separated or emotionally estranged from his parents. There is always the possibility that the child will interpret his illness as punishment for real or imagined misconduct, and, if at the time of hospitalization he is abruptly separated physically from the parents, the most effective source of reassurance has been removed. Many of the children are emotionally estranged from their parents, and good therapy must include the provision of adequate parental substitutes who can help the child feel accepted and loved. All children fear mutilation to some degree and harbor many fantastic concepts of what may happen to them in a strange situation. The doctor must realize that such fears may exist and carefully guard against discussion of heart disease and operations or other dangerous-sounding procedures (often couched in ambiguous technical terms which arouse anxiety) in the patient's presence. Each procedure should be fully explained and the child given a reasonable opportunity to ask questions. After a painful procedure he should be given an opportunity to express his resentment verbally or through play, with the approval of the doctor. Variation in emotional care of patients is one of the major uncontrolled factors not taken into consideration by physicians when evaluating the results of therapy.

REST

It is universally conceded that during the acute stage of the disease the child's most urgent need is complete rest in bed. Complete rest, although routinely requested by the physician, is approached to varying degrees with each patient. To attain complete rest much more is required of a hospital than a clean bed, quiet sunny surroundings, a daily bath with tepid water, and controlled temperature and humidity. While these are undoubtedly important, the child also needs to realize that he is in a good place where everyone in attendance is interested in him and that his family wants him to be in the hospital. A type of highly individualized care is required, which necessitates a well trained hospital staff that holds the patient's interest at heart and is willing to give of itself for the welfare of the child.

Sedatives frequently are useful in providing physical rest. If adequate physical and emotional care are provided, sedatives should not be required for any extended period. Because rest in bed is difficult or impossible to provide in the homes of many patients with rheumatic fever, and in too many hospitals, it is not surprising how frequently it is carried out halfheartedly or not at all. Variation in the amount of rest is another major uncontrolled factor not taken into consideration by physicians when evaluating the results of therapy.

NUTRITION

The nutritional care of the child with rheumatic fever is extremely important. To a great extent the same situation exists with diet as with complete rest in bed in that the nutritional requirements of the child are approached to varying degrees. In working out a diet one must keep in mind not only the child's nutritional needs but also his physical condition and his food likes and dislikes. The child should participate in the selection of food, and the food should be prepared and offered in such a way that his participation is educational and the mealtimes are pleasant. Under such a regimen mealtimes can become an interesting project rather than a tiresome routine which may result in serious feeding problems. The physician too frequently simply advises the mother to give the child nutritious foods or, in the hospital, writes routine diet orders. The family background and the child's eating habits are often completely ignored. Routine trays providing protective and even fortified foods are of little avail if the child is unable or refuses to eat the food. Forcing of the food by the nutritional or the nursing staff only complicates the situation. The importance of understanding personnel again becomes obvious.

From the Department of Pediatrics, State University of Iowa.

Read before the Section on Pediatrics at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

[1] Griffith, G. C.: Rheumatic Fever: Its Recognition and Treatment, J. A. M. A. **133**: 974 (April 5) 1947. Coburn, A. F.: The Rheumatic Fever Problem: I. Present Status, Am. J. Dis. Child. **70**: 339 (Nov.-Dec.) 1945.

The child with acute rheumatic fever invariably is in a poor nutritional state and has anorexia. Small frequent feedings are to be preferred to routine meals. The diet should be low in fat because of the anorexic effect of fat and the inability of sick or malnourished children to absorb it well.[2] The diet should be high in protein content because the patient is to a greater or less extent in a state of protein depletion and the sick or malnourished child's ability to absorb and utilize protein is good.[3] Carbohydrate foods are well utilized and afford the easiest means of maintaining an adequate caloric intake.[2]

The mineral requirements are met best by including 1 quart (1 liter) of skimmed milk in the diet and providing 10 to 15 mg. of iron either in the foods or as inorganic salts.

The intake should include at least 5,000 units of vitamin A and 400 units of vitamin D. The water-miscible forms of these fat-soluble vitamins are known to be absorbed more readily than oily preparations.[4] It has been found that children with active rheumatic fever have a low level of vitamin A in their blood.[5] At present my associates and I are attempting to determine the vitamin A requirements of children who suffer from active rheumatic fever. The vitamin D requirement is stated to be increased in children under nutritional stress; however, studies in our laboratory tend to show that such children recover nutritional efficiency slowly and that recovery is as prompt with lower levels of vitamin D and a fully adequate diet as with high levels of vitamin D.

It may be that the vitamin A and D requirements of these children are well above those of the normal child. Large doses of vitamin A or D are not yet warranted and, with the present limited knowledge, should be avoided, since fat-soluble vitamins are stored in the body and excessive intakes give rise to later manifestations of toxicity. Many studies have been made to determine the ascorbic acid requirements of the child with acute rheumatic fever.[6] The child should receive daily at least 100 mg. of ascorbic acid, preferably in foods. If the child's intake of protective foods is ample, he will receive sufficient amounts of the water-soluble vitamins. However, when the food intake is limited in the more acute phase of the disease, preparations of the vitamin B complex should be given to about double the allowance recommended by the Food and Nutrition Board of the National Research Council for normal persons.

The food intake should be evaluated daily and every effort made to meet the nutritional needs of the child.

If the child has signs of cardiac decompensation, restriction of sodium intake is indicated (1 to 3 Gm. daily). The only sodium permitted is that contained in the protein foods. The water intake is not restricted.

The value of blood transfusions for the child with acute rheumatic fever and hypochromic anemia has not been sufficiently studied. Repeated small transfusions, given slowly, have been used routinely in our hospital without apparent harm and often with dramatic results. Even signs of decompensation have not been considered as a contraindication if the hemoglobin value is less than 9 Gm. per hundred cubic centimeters. Washed blood cells might be preferable, but the value of the plasma for nutrition must be considered. Further research in this area is indicated. We have not used concentrated dextrose solution, although this type of therapy has been recommended, in conjunction with insulin therapy. I know of no evidence to support the recommendation that insulin be used in conjunction with parenterally administered dextrose in children with rheumatic fever. The fluid requirements of the child must be met. An isotonic solution of dextrose may be administered slowly for this purpose. Adequate fluid intake is extremely important in avoiding toxic effects of salicylates and digitalis.

THE SALICYLATES

Only the salicylates have survived the test of time in the treatment of rheumatic fever. They have been in use for over half a century, and opinions have varied as to the mode of action and the value of salicyl compounds. Most authorities agree that the salicylates have analgesic and antipyretic action.[7] Few, however, have felt that salicylates modify the progress of the disease. Tremendous interest has been aroused, therefore, by Coburn's [8] report that by means of massive doses of salicylates cardiac sequelae could be modified if a level of blood salicyl (measured as salicylic acid) above 350 micrograms per cubic centimeter were maintained. According to this author, the failure of salicylate therapy in the past may have been due to inadequate dosage.

Numerous reports of salicylate poisoning of children with rheumatic fever have appeared in the literature since higher doses began to be employed as advocated by Coburn. Hyperpnea, anorexia, apathy and lassitude are the important early signs of salicylate intoxication in children. Hyperventilation is believed to result from a disturbance of the respiratory center and causes respiratory alkalosis. The diagnosis of respiratory alkalosis is dependent, as is that of respiratory acidosis, on the estimation of both the total plasma carbon dioxide and the plasma chloride content and the hydrogen ion concentration of the plasma or the urine.

Dubow and Solomon [9] have recently studied salicylate tolerance and toxicity in children and have found that sodium salicylate given in divided doses over a twenty-four hour period (0.85 grain [0.05 Gm.] per pound of body weight) resulted in therapeutic blood levels without toxic symptoms and with normal serum carbon dioxide content and p_H values. Acetylsalicylic acid gave slightly higher blood levels than the sodium salt. Salicylates were found to be tolerated less well by acutely ill than by mildly ill or convalescent children. When physiologic function was deranged, even small doses resulted in very high blood levels. Adequate fluid intake and renal function were major factors in preventing retention of the drug.

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[2] Stearns, G.; Jeans, P. C.; Catherwood, R., and McKinley, J. B.: Diet in Malnutrition and Celiac Disease, J. Pediat. 18:12, 1941.

[3] Dodd, K., and Minot, A. S.: Edema in Infancy and Childhood as an Expression of Chronic Dietary Insufficiency, J. Pediat. 8:442, 1936.

[4] Kramer, B.; Sobel, A. E., and Gottfried, S. P.: Serum Levels of Vitamin A in Children, Am. J. Dis. Child. 73:543 (May) 1947. Lewis, J. M.: Further Observations on the Comparative Antirachitic Value of Crystalline Vitamin D Administered in Milk, Corn Oil or in Propylene Glycol, J. Pediat. 8:308, 1936. Lewis, J. M.; Bodansky, O.; Birmingham, J., and Cohlan, S. Q.: Comparative Absorption, Excretion and Storage of Oily and Aqueous Preparations of Vitamin A., ibid. 31:496, 1947.

[5] Shank, R. E.; Coburn, A. F.; Moore, L. V., and Hoagland, C. L.: The Level of Vitamin A and Carotene in the Plasma of Rheumatic Subjects, J. Clin. Investigation 23:289, 1944.

[6] Wilson, M. G., and Lubschez, R.: Ascorbic Acid with Special Reference to the White Layer. J. Clin. Investigation 25:428, 1946.

[7] Dodd, K.; Minot, A. S., and Arena, J. M.: Salicylate Poisoning: An Explanation of the More Serious Manifestations, Am. J. Dis. Child. 53:1435, 1937.

[8] Coburn, A. F.: Salicylate Therapy in Rheumatic Fever: A Rational Technique, Bull. Johns Hopkins Hosp. 73:435, 1943.

[9] Dubow, E., and Solomon, N. H.: Salicylate Tolerance and Toxicity in Children, Pediat. 1:495, 1948.

When sodium bicarbonate is simultaneously administered with salicylates the serum salicylate level is lower.[10] Hoffman and Nobe[11] recently showed that the urinary salicylate is proportional to the urinary p_H and that the renal excretion of salicylate is dependent on the amount of fixed base available for the excretion.

Hypoprothrombinemia induced by salicylate was first demonstrated by Link, Overman, Sullivan, Huebner and Scheel.[12] They fed a salicylate to rats deficient in vitamin K, and many of the animals so treated died with hemorrhagic manifestations. Recent studies have shown that similar effects have occurred in human subjects, even though they have shown no previous vitamin K deficiency. Meyer and Howard[13] reported that vitamin K will protect completely against the reduction of prothrombin if it is given in conjunction with salicylate. Shapiro[14] estimated that approximately 1 mg. of synthetic vitamin K will counteract the prothrombin-reducing action of 1 Gm. of acetylsalicylic acid.

Taran and Jacobs[15] showed that the oral route of administration of salicylate is as effective as the intravenous and that the intravenous route is hazardous. They found large doses of salicylates to be effective in controlling the exudative manifestation of the disease.

In our experience children have tolerated acetylsalicylic acid well. It has not been necessary to use sodium bicarbonate to prevent gastric irritation. Our present policy is to use acetylsalicylic acid in the amount of 0.7 grain (0.04 Gm.) per pound of body weight per 24 hours, divided into six doses, and to obtain blood studies if any suggestive symptoms or signs of intoxication are noted.

There can be little doubt that most children with acute rheumatic fever are benefited by the administration of salicylate if the doses are sufficiently large to lower the temperature and alleviate discomfort. As the child's sense of well-being improves, he becomes more hopeful and more cooperative, his appetite improves and he can rest better. Whether the salicylates per se or their secondary effects modify the course of the disease is of academic interest. It must be remembered, however, that the drugs should be administered cautiously, the doses being calculated on the basis of body weight and clinical status, with due regard for the acid-base changes and hypoprothrombinemia which they may produce. It would seem wise to avoid massive doses if the child must be treated where laboratory facilities are limited.

ENDOCRINE THERAPY

A steroid isolated from the adrenal cortex (compound E [17-hydroxy-11-dehydrocorticosterone]) and the adrenocorticotropic factor isolated in relatively pure form from the anterior lobe of the pituitary gland have been administered to a small group of children with acute rheumatic fever within the present year. A preliminary report was recently published by the Mayo group. So far as I know, only 16 patients with rheumatic fever have been observed during and following the administration of either the adrenal steroid or the pituitary adrenocorticotropic factor. The dramatic response of the patients offers hope that present knowledge of this serious disease may rapidly increase in the near future.

In each of the 3 patients with acute rheumatic fever observed by Hench and his associates[16] the administration of the adrenal cortex factor called compound E or the pituitary adrenocorticotropic factor was followed by the rapid disappearance not only of the fever, tachycardia and polyarthritis but also of the abnormal plasma protein patterns, the elevation of sedimentation rates and the electrocardiographic changes. These authors stated that "in view of the markedly beneficial effect of compound E on the skeletal muscles and fibrous tissues of patients with rheumatoid arthritis, it may be hoped that compound E will exert a similar effect on the cardiac muscles and fibrous valves in rheumatic fever."

However, it must be emphasized that the scarcity of compound E and of the adrenocorticotropic substance and the limited clinical experience with them in rheumatic fever make quite inappropriate now the use of term treatment except in an investigative sense. No definite toxicity was encountered, but these preparations are potent products and long range observations are necessary before conclusions can be drawn.

DIGITALIS

Controversy continues as to whether digitalis produces more toxic than therapeutic effects for the failing heart of the child with acute rheumatic carditis. In my opinion and experience there is more evidence to support than to condemn the use of digitalis during impending or definite heart failure. We must remember that digitalis is not an antirheumatic drug and that the child may become worse, with heart failure increasing even when full therapeutic doses of the drug are given. The dosage must be calculated accurately on the basis of corrected body weight, and the fluid exchanges of the body must be kept in mind. In our experience the most frequent error lies in increasing the dose until toxic symptoms and signs appear. It is my belief that best results are obtained when a plan is followed which does not vary significantly from patient to patient. Although serial electrocardiographic tracings are helpful in detecting early signs of toxicity (especially toxic rhythms), their utility is limited. In the majority of cases it is safe to assume that the child has had enough digitalis if there are pronounced depressions of the R-T segments with deep inversion of the T wave.

Since many glucosides are becoming available for clinical use, the problem of selecting a particular glucoside as the one of choice becomes more complicated. Obviously children with active rheumatic carditis and congestive heart failure are not desirable subjects for preliminary studies. A standard preparation of powdered digitalis (0.1 Gm. = 1 U. S. P. digitalis unit) given in the dosage of 8 mg. per pound of body weight or digitoxin in the dosage of 0.008 mg. per pound of body weight for a full digitalizing dose is to be recommended. Half of the calculated amount is given for the first dose, and the remaining half is given in four doses over the remainder of the twenty-four hour period. A maintenance dose of approximately one eighth of the digitalizing dose is administered each day in two parts and the dosage adjusted according to the response of the child and the findings of repeated electrocardiographic tracings.

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[10] Smull, K.; Wegria, R., and Leland, J.: The Effect of Sodium Bicarbonate on the Serum Salicylate Level During Salicylate Therapy of Patients with Acute Rheumatic Fever, J. A. M. A. **125**: 1173 (Aug. 26) 1944.

[11] Hoffman, W. S., and Nobe, C.: Renal Excretion of Salicylate During Treatment of Acute Rheumatic Fever, Proc. Central Soc. Clin. Research **21**: 83, 1948.

[12] Link, K. P.; Overman, R. S.; Sullivan, W. R.; Huebner, C. F., and Scheel, L. D.: Studies on the Hemorrhagic Sweet Clover Disease: XI. Hypoprothrombinemia in the Rat Induced by Salicylic Acid, J. Biol. Chem. **147**: 463, 1943.

[13] Meyer, O. O., and Howard, B.: Production of Hypoprothrombinemia and Hypocoagulability of the Blood with Salicylates, Proc. Soc. Exper. Biol. & Med. **53**: 234, 1943.

[14] Shapiro, S.: Studies on Prothrombin: VI. The Effect of Synthetic Vitamin K on the Prothrombinopenia Induced by Salicylate in Man, J. A. M. A. **125**: 546 (June 24) 1944.

[15] Taran, L. M., and Jacobs, M. H.: Salicylate Therapy in Rheumatic Fever in Children, J. Pediat. **27**: 59, 1945.

[16] Hench, P. S., and others: The Effects of the Adrenal Cortical Hormone 17-Hydroxy-11-dehydrocorticosterose (Compound E) on the Acute Phase of Rheumatic Fever: Preliminary Report, Proc. Staff Meet., Mayo Clin. **24**: 277 (May 25) 1949.

OXYGEN THERAPY

Oxygen is of definite benefit to the child with rheumatic pneumonitis or congestive heart failure. It should be given early and as long as the patient's respirations are labored. The method of administration will to a great extent depend on the facilities at hand. Few hospitals have facilities comparable to those described by Taran.[17] This author's recent studies show that established cardiac damage cannot be reversed by oxygen therapy and that the direction of the rheumatic activity is not measurably altered but that oxygen therapy is an important form of treatment in acute rheumatic carditis of the exudative type with minimal mechanical cardiac disabilities. In our experience the oxygen box or tent with transparent sides is better tolerated by the child than the nasal tube. The patient should be psychologically prepared by the physician before the administration of oxygen is undertaken, and the nurse should be in constant attendance until all fear of the apparatus has been dispelled.

DIURETICS

Diuretics are indicated when there are signs of heart failure. The mercurial diuretics (mercurophylline injection U. S. P. [mercuzanthin®] or meralluride sodium solution N. N. R. [mercuhydrin® sodium solution]) have been most effective in our experience. The preparations named are administered in frequent small doses intramuscularly until evidence of congestive failure has subsided.

OTHER DRUGS

Chemotherapeutic drugs, such as sulfadiazine, or antibiotics, such as penicillin, are ineffective during the active phase of the disease. There is evidence that sulfonamide drugs given during the active phase may cause exacerbation of signs and symptoms. Penicillin apparently has no effect on the course of the disease and would therefore be preferred to sulfonamide drugs in the treatment of a superimposed bacterial infection that would respond to either drug.

We have had no experience with other drugs, such as the benzyl ester of succinic acid, para-aminobenzoic acid and gentisic acid, which are being studied as possible substitutes for salicylates. It is hoped that research in this area will clarify the action of these drugs and advance present knowledge of the pathologic physiology of rheumatic fever.

The child with chorea presents a special problem from the therapeutic standpoint. Often carditis and other signs of rheumatic fever are absent. In fact, there is still reason to doubt whether chorea is a manifestation of rheumatic fever or whether it may not be a separate entity which develops under common environmental conditions. The importance of a complete social history and psychologic evaluation of the child cannot be overstressed in the management of Sydenham's chorea. In our experience serious social problems are almost invariably found in this group of patients. Treatment consists in the use of sedatives, but, as previously stated, the sedatives should not be required for any extended period if adequate emotional and physical care are provided. Adequate emotional care frequently requires psychiatric consultation.

To this point the discussion of the treatment of the rheumatic child concerns the acute phase of his disease. When the disease becomes subacute, or is in the fourth phase, he will require weeks or months of convalescent care before he can be allowed to resume physical activity. Convalescent care is best given in a sanatorium where there are adequate facilities to meet the physical, emotional, intellectual and spiritual needs of the child. He should remain under the regimen of convalescent care until his disease is definitely inactivated, and then activity should be resumed gradually. The child who has spent his subacute phase in a convalescent home or ward after he has proved that he can endure limited physical activity without any signs or symptoms of cardiac embarrassment is ready for home care. Concurrent with the care of the child is the education of the community to help the parents establish a wholesome environment for the patient and other members of the family.

As I stated in the beginning, when the rheumatic child comes under medical care the home environment of the child should be evaluated by an experienced and understanding medical social worker. When it is found inadequate, as it most frequently is, the work of raising the level of the environment should be started immediately. In our clinic special emphasis is placed on insuring a good dietary regimen for the child and for his family. This, however, is not the only phase of family rehabilitation that is undertaken. When the family social situation is poor, great effort is made to improve it, too. In short, we try to insure a good environment for the rheumatic child to live in. It is our feeling that this is the factor which protects against recurrence of the disease, and in many instances it is the only one the child will need.

The family of each child is instructed by the doctor and the nurse, and often by a dietitian, regarding the importance of an adequate diet, which should include for daily consumption: 1 quart (1 liter) of milk; one or two eggs; one serving of meat, fish, fowl or liver; two vegetables (one-half cup is considered a medium serving); one orange, apple or tomato; one other fruit in addition; one teaspoon or equivalent of cod liver oil; six teaspoons of butter or margarine. They are also told that other foods, such as bread, cereal and potatoes, can be added to satisfy the appetite and maintain correct weight, but in no circumstances are they to replace any of the foods previously named; cereal is not to be served more than once daily. Rather, the child is to be encouraged to eat larger quantities of fruits and vegetables; varieties of these are to be used, so the child will not form likes and dislikes.

Each family is advised to have the child sleep in a room of his own whenever possible, or at least to sleep alone, and to have about ten hours of rest each night. The importance of proper clothing is stressed, as well as control of the temperature and the humidity of the home. With regard to the care of intercurrent infection, the family is advised to have the child go to bed if there is any sign of infection, and to consult the family physician as early as possible. If another member of the family has a cold, sore throat or any other infectious disease, the child is to be kept away from that person and the family physician notified. The family is told to have the child play with other children in the normal way, but to plan his activities to avoid fatigue. In addition, psychologic advice is given to prevent overprotection. The importance of persevering with a high level of care day after day and year after year is emphasized and reemphasized at each clinic visit in the medical follow-up.

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[17] Taran, L. M.: Oxygen Therapy in Rheumatic Carditis, Am. J. Med. 5: 379, 1948.

Many of the children with rheumatic fever living in Iowa come under the care and supervision of the University Hospital and the clinics of State Services for Crippled Children held throughout the state. The recrudescence of rheumatic fever has been studied recently by us among 266 of these children. The study [18] was undertaken to determine the rate of recurrence in a group of rheumatic subjects who had received special attention in the effort to improve their diets and level of environmental care. Many of the observations of the study (onset of the disease, 1930 to 1946) were made prior to the use of sulfonamide prophylaxis by any one and we have not used sulfonamide drugs, although most clinics have used them in recent years.

In a study of the rate at which rheumatic fever recurred within one year after the previous attack in children 4 to 16 years of age the rates of an Iowa control group and an Iowa treated group were compared. The rate of the control group was significantly higher than that of the treated group and did not differ significantly from the rate reported by Wilson for recurrences within one year after previous attacks.

The 266 patients of the Iowa study group were under observation a total of 893.5 person-years from 4 to 21 years of age. The age-specific recurrence rates [19] were obtained. For the age period 4 to 13 years there were 37 recurrences and 3 deaths for 504.5 person-years of observation, or a rate of 7.9 per cent; for the age period 14 to 16 years there were 24 recurrences for 233.5 person-years of observation, or a rate of 10.3 per cent; for the age period 17 to 21 years there were 7 recurrences for 155.5 person-years, or a rate of 4.5 per cent. In the total group 71 major and minor recurrences were experienced by 51 children.

The recurrence rate of rheumatic fever found for this group of rheumatic subjects who received special attention with a view to improving their diets and level of environmental care is significantly different from that reported by Wilson for a random sample. The recurrence rate for the study group is lower for the age group 4 to 13 years and slightly higher or the same for the older groups. It is noteworthy that the period from 4 to 13 years of age is one in which the nutritional requirements of the child are high and that it is a time in the child's life when his habits of living can be controlled with less difficulty than from approximately 14 years on.

Of the 51 children who had recurrences, 13 whose recurrences were accompanied with carditis comprise a group that suffered the serious effects of the disease. An analysis of their histories and environmental care shows that 3 died within two months after being discharged from the sanatorium, and in retrospect there is doubt as to whether or not their disease was inactive. Their environmental care was fair or better than average except for 1 boy who lived in a poor social situation. The 10 children who survived with carditis, on the whole, had poor home environments; all lived in poor social situations, 7 in limited economic circumstances and 7 on a poor and 3 on a fair dietary regimen.

In recent years a number of clinics have been trying sulfonamide prophylaxis for the prevention of recurrences and have reported successful results. The recurrence rate of major episodes for the accumulated reported groups of rheumatic patients who have received sulfonamide prophylaxis is 1.5 per cent. These reports show that the drugs have prophylactic value. The reported number of toxic reactions show the sulfonamide drugs to be by no means harmless. In addition to the toxic and allergic reactions excited by chemotherapeutic or antibiotic agents, there is also the danger that the host may lose his ability to resist the organism and also that the bacteria may become resistant to these drugs. Quinn,[20] reporting recently an epidemiologic study of rheumatic fever occurring in Navy training centers, stated:

> At one time the Navy was faced with a desperate situation wherein epidemics of hemolytic streptococcus infection were a grave menace to the training program. Because of the seriousness of the problem, prophylaxis with sulfonamide compounds was instituted. The incidence of streptococcus was reduced dramatically, and at the same time the rate of rheumatic fever fell; these reductions, however, were only temporary. Later, certain strains of hemolytic streptococci acquired resistance to the sulfonamide compounds and the incidence of infection by these organisms returned to epidemic proportions. Similar experiences were observed in the other naval and army establishments.

Baldwin,[21] reporting her observations of rheumatic children receiving sulfonamide prophylaxis while living at home, stated that sulfonamide-resistant strains of streptococci did not appear.

The histories of the 266 Iowa rheumatic children showed that if the disease is definitely inactive an excellent diet and wholesome living conditions will practically eliminate the chance of a recurrence with carditis. It is my opinion that sulfonamide prophylaxis is indicated only for those children recovered from rheumatic fever who have definite rheumatic heart disease and are forced to live in an environment which does not provide a good diet and at least a fair level of general care. It is possible that oral penicillin may prove to be safer and as effective as sulfonamide compounds in prophylaxis.

Special mention of our experience with chorea might be made here. Chorea is a type of manifestation which we found most difficult to prevent, and it accounted for approximately one sixth of the recurrences. Twelve children had recurrences of chorea, and a social evaluation of the home situation was available for 10 of them. Of these, 4 had poor or poor to fair, 5 fair and 1 good home environment. That is, for only 1 child was the home situation considered good, and that of the remaining 9 was described as marginal or worse. I am of the opinion that an attack of chorea may be precipitated by emotional strain or psychologic trauma experienced by the child in his home and sometimes in his school environment. In view of this impression I advise that the home social situation be investigated and rehabilitated and that any school problems be looked into, and the teachers interviewed, before the child returns to his home and school environment.

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[18] Jackson, R. L.; Kelly, H. G.; Rohret, C. H., and Duane, J. M.: Rheumatic Fever Recurrences in Children Without Sulfonamide Prophylaxis: An Evaluation of Environmental Factors, J. Pediat. **31**: 390, 1947.

[19] The recurrence rate for a specified age period is the number of recurrences during the specified period divided by the number of person-years observed during the specified period. The quotient is multiplied by 100 to express the rate in terms of percentage.

[20] Quinn, R. W.: Epidemiologic Study of Seven Hundred and Fifty-Seven Cases of Rheumatic Fever, Arch. Int. Med. **80**: 709 (Dec.) 1947.

[21] Baldwin, J. S.: Sulfadiazine Prophylaxis for Rheumatic Fever, J. Pediat. **30**: 284, 1947.

For the child in whom rheumatic fever has been inactivated, and for any child, the treatment of infections is most important. It is during the phase of the invasion of the beta hemolytic streptococci that one must watch and give adequate medical care to make certain, if possible, that the child has completely recovered from the infection. With an invasion of beta hemolytic streptococci the child susceptible to rheumatic fever is in grave danger of another cycle of the disease. In my opinion, which is based on clinical impressions, many attacks of rheumatic fever, including first attacks, might have been avoided if the children when they first became victims of an acute infection had been put to bed, given good medical and nursing care and kept in bed until all signs and symptoms of active infection disappeared. While I have not endorsed routine sulfonamide prophylaxis, I think that when there is an epidemic of beta hemolytic streptococcic infection the child susceptible to rheumatic fever should be given sulfonamide prophylaxis under the supervision of a physician. I would avoid giving sulfonamide drugs routinely and continuously and by this dangerously simple device neglecting the possibilities of improving the child's health by adequate dietary and better living conditions, and the benefits derived therefrom.

Children with rheumatic fever most frequently come from impoverished and disrupted homes. The disease tends to breed in families where serious long-standing social problems exist. In our experience the economic factors are secondary in importance to the sociologic factors, because society has ways and means of helping the needy. Students of rheumatic fever cannot fail to learn how important wholesome family life is to the welfare of children and how devastating selfishness, greed, drunkenness, promiscuity and divorce are to wholesome family life. Only when an attack on these complicated detrimental forces is made, utilizing supernatural and natural resources, can one hope for the eradication of this scourge of childhood.

ABSTRACT OF DISCUSSION

Dr. William Weston Jr., Columbia, S. C.: Granted that the etiologic factor of rheumatic fever is the hemolytic Streptococcus A group, physicians should be able to eliminate the original infection and certainly control recurrences, but this is not the whole story, as there is some antigen or agent or body yet undetermined which causes the pathologic process that does not respond to the known antibiotics. Early recognition and prompt treatment are of the utmost importance to prevent as much cardiac damage as possible. Salicylates, 1 to 1½ grains (0.06 to 0.1 Gm.) per pound (0.5 Kg.) of body weight have been used . I am glad to see that Dr. Jackson has reduced the dosage to 0.7 grain (0.46 Gm.) per pound of body weight. In addition I give aluminum hydroxide to prevent gastric distress. The emotional care and rest have been well covered by the author. I would add to this the consideration of the parent-child relationship, which has been emphasized by the group in New York by continuing the treatment of the child in the home. Bed rest is a difficult problem in the child when he feels well, and one which is not easily understood by the young child, to whom full explanation is necessary. Activity must be controlled, and I have a routine. I prescribe no competitive exercise, such as swimming, skating, football, baseball, basketball, track or bicycle riding. The nutritional state of the child is too frequently overlooked. It has been pointed out that few British persons contracted rheumatic fever in World War I, probably because of a high intake of beef; also, in the Yukon, where persons are huddled together and have many streptococcic sore throats, inhabitants do not have rheumatic fever and their meat intake is high. A high protein diet must play an important role in the prevention of rheumatic carditis; however, other factors in foods must not be neglected, such as whole grain cooked cereals and vegetables which contain large quantities of the vitamin B complex, the citrus fruits and tomato juice, which have ascorbic acid (vitamin C). I have been using the sulfonamide drugs for six years in private practice and over two years in the clinic as a measure to prevent recurrent attacks. There are less than 2 per cent recurrences. I would like to ask Dr. Jackson whether or not he has used para-aminobenzoic acid in conjunction with the salicylates, which seems to have a synergistic action. My experience with it has been limited, but I thought that it had a favorable effect in my cases. Penicillin has not been used as a routine preventive measure except when surgical treatment or tooth extraction is necessary, at which time 300,000 units is given the day prior to and 300,000 units the day following the operation. Results have been good, but even here use of the sulfonamide drugs has not been discontinued.

Dr. John P. Hubbard, Philadelphia: Dr. Jackson stated that convalescent care can best be given in a sanatorium. While it is sometimes stated that his own home is the best place for convalescent management of the rheumatic child, most of the homes from which the rheumatic patients come are not suited to provide all that is needed during convalescence. The principles of convalescent management are, briefly: adequate medical care by physicians familiar with the disease; adequate nursing care, also by nurses familiar with the disease; a good, well rounded diet; protection against respiratory or other infections; schooling during the time that the child is in bed and during convalescence; occupational therapy to keep the child busy and also to keep him reasonably quiet when he needs rest, and social service. I support Dr. Jackson's statement, that convalescent care can best be given in a sanatorium, and at the same time I realize that such care is often wishful thinking. Too often, children are kept on the acute ward of a hospital because there is no place else for them to go. They cannot return to an inadequate home and there is no sanatorium to which to send them. Therefore they remain sometimes month after month, on the acute ward, where the hazard of infection is great. I suggest that serious attention be given to more provision for adequate convalescent sanatorium-type management for the rheumatic child. One more point in relation to the prevention of illness. I refer to the child who is thought to have an organic heart murmur at the time of a health examination. He may be referred to a diagnostic clinic. There he goes through a procession of procedures, submits to electrocardiography, determination of sedimentation rate, roentgen examination, fluoroscopy and discussion by physicians as to whether the murmur is or is not organic. The child takes it all in, even though it is determined that he does not have heart disease. He is then sent away with the statement, "He is perfectly normal; treat him as a normal child." But he is not as normal as he was, because he has had thrown into his psyche the fear and hazard that perhaps he has heart disease. In considering the preventive aspects of rheumatic heart disease, I suggest that serious attention be given to the child who is suspected of having rheumatic heart disease but does not have it.

Dr. May G. Wilson, New York: A discussion of the treatment of rheumatic fever and the prevention of recurrences must be prefaced by admitting that physicians do not know the cause of the disease and the nature of the mechanisms responsible for its manifestations, nor are there specific preventive measures or a specific diagnostic test. Genetic and epidemiologic studies have demonstrated that hereditary factors are primarily responsible for the familial incidence of the disease; other contributory factors, such as environment, are secondary. This view is supported by a comparison of the age-specific mortality rates for 1,042 rheumatic children under observation during the past thirty years, which revealed no difference for children born before and after 1919, as might have been expected in view of the improvement in the general care and nutrition of children during the past twenty years. However, as Dr. Jackson has stated, the rheumatic child can be given the best possible pediatric care. Measures that will lessen the daily stress of childhood, including the many factors such as infections, chilling and overfatigue that appear to precede rheumatic fever, are indicated. Dr. Jackson's experience would lend support to the beneficial results of such measures. The recent spectacular report of Hench and Kendall in the treatment of rheumatoid arthritis as well as rheumatic fever lends hope that a comparable approach in rheumatic fever will be rewarding in an understanding both of the nature of the hereditary factor and the mechanism of the disease.

Lord Horder, London, England: Rheumatic fever in Great Britain has changed its clinical picture considerably. Although rheumatic fever is not often seen in adolescents in Great Britain now, when it occurs the case is not recognized usually as rheumatic fever, and that in itself has historical significance. In little children, however, there is plenty of what is called "subacute rheumatism," or "acute rheumatism"—I like the former term, because it suggests that one has to look for it. One does not see the dramatic syndrome, so much as some of the symptoms that were referred to by Dr. Jackson. On the problem of the rheumatic child I agree with Dr. Hubbard. The rheumatic child must be kept under observation for a long time. He must not be released until the physician is certain that the position has become stabilized. There is what I consider a good system in Great Britain with regard to the school child: a thorough check-up on the child's entry into school, and a check-up twice a year of an ordinary kind. But supposing that, during the first survey, the child is found to be a subacute rheumatic patient; then the child is hospitalized and treated accordingly. There is another important group of suspects, concerning which it would not be well to say, "You must be hospitalized and kept under strict observation." Instead of waiting for six months, those children are grouped and are resurveyed monthly. Great pains are taken to detect the rheumatic child early and to keep that child, whether the disease is overt or suspected, under observation for a considerable time. The search for therapy in rheumatic fever is so intense that I am not surprised that it has reached blood transfusion, but I am thinking of getting the child's confidence and so on, along the line that Dr. Jackson discussed, and then perhaps I would employ some blood transfusions! I would not consider that measure often necessary in the treatment of rheumatic fever. Until more is known about the etiologic basis of the disease, physicians cannot hope to introduce any specific treatment. It is not known how salicylates act. I do not believe the tentative venture of compound E has revealed how salicylates act. But bearing in mind that the treatment of a patient with compound E costs about $16,000 for a few days, I do not envisage any large experimental use of this agent in treatment of rheumatic fever. Speaking of the etiologic basis of rheumatic fever, physicians are convinced in Great Britain that environmental factors are of great importance. It may be that changes in the environmental factor account for the lowered incidence of rheumatic fever in general. But it is difficult to understand how the change in environment should have changed the character of the disease rather than merely change its incidence. Yet there were found in a training ship on the Clyde River a number of boys with acute rheumatism. The bacteriologists were disappointed because not only was there nothing specific in the flora of the throat, but there was nothing helpful in the immunologic work done on the blood. What was evident beyond any question was the confined space in which these boys were living. I think that air, sunlight and nutrition are important factors in considering causation, but they do not answer the whole question, "What is rheumatic fever?"

THE DIAGNOSIS AND TREATMENT OF "MECHANICAL BACKACHE"

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Pain in the lower part of the back is one of the most common complaints presented to the general practitioner. So common is this ailment, indeed, that the physician is apt to minimize its importance. Even when low back pain is the patient's major complaint, the physician may simply make a diagnosis of "arthritis," tell the patient there is nothing that can be done to cure the condition and prescribe some mild sedative for symptomatic relief. The lack of interest among members of the medical profession in this major problem has given impetus to the development of various medical cults and schools which specialize in the treatment of backache. All too frequently a patient with pain in the lower part of her back says that she consulted a mechanotherapist, a chiropractor or an osteopath first rather than her local physician because she believed these men were specialists in the treatment of backache. The only way this situation can be remedied is for each physician to take a greater interest in the problem of back pain, train himself in the proper diagnosis of the condition and then either institute the proper treatment himself or direct the patient to another physician who is capable of carrying out the necessary treatment.

Good body balance is necessary to maintain the erect position. There are certain mechanical factors which prevent the maintenance of proper body balance. Among these factors are faulty posture, obesity, relaxed abdominal musculature, weak back musculature and inequality of length of the lower extremities. When pain in the back is caused by some alteration of the normal body balance through the action of one or more of these mechanical factors, the condition is termed a "mechanical backache." The same mechanical factors often play a significant role in producing at least a portion of the low back pain associated with fibrositis, hypertrophic arthritis, rheumatoid spondylitis, spondylolisthesis and other causes of backache. The term "mechanical backache," however, should be reserved for the case in which there is nothing demonstrable that would account for the pain within the back or the pelvis other than mechanical factors.

Good posture is essential to good body balance. When one stands with good posture, a perpendicular line dropped from the ear passes through shoulder, hip and ankle joint (figure, *A*). With good posture, the head is high, the chin up and in, the chest up, the shoulders relaxed and back, the abdomen flat, the lower part of the back flattened, the knees straight and the feet parallel. Little actual muscle energy is required to maintain the erect position with good posture because the body is so correctly balanced. It is obvious, however, how quickly normal body balance is upset by a sagging abdomen, a flattened chest, humped shoulders and a swayed back (figure, *B*). With poor posture, unnatural stresses and strains are thrown on muscles and ligaments which support the vertebral column, and

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these stresses and strains become most pronounced at the lumbosacral joint.

More than ½ inch (12.5 mm.) of shortening of a lower extremity may produce sufficient tilting of the pelvis to cause abnormal strain of the back musculature. Normally, the pelvis may compensate satisfactorily for a discrepancy in length of leg of as much as 1½ inches (about 4 cm.), but a shortening of more than this cannot be counteracted by a pelvic tilt alone without causing scoliosis. Unless the patient wears on the shoe of the short leg an elevation of sufficient height to reduce the discrepancy to a value comfortably equalized by lateral tilting of the pelvis, pain in the lower part of the back may result. It is unusual for a discrepancy in leg length of ½ inch or less to cause pain in the lower part of the back. If one leg measures only ¼ inch (6.5 mm.) shorter than the other leg, this discrepancy in length is considered to be of no clinical significance; in fact, ¼ inch may well be within the limits of error with the usual methods of measurement employed.

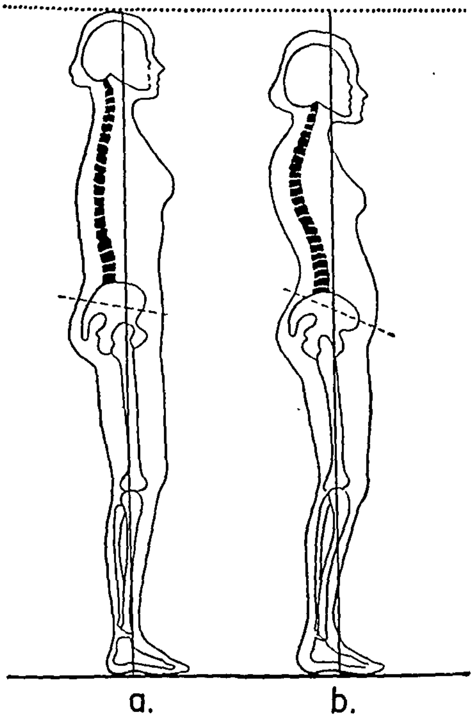

Fig. 1. (a) Standing with good posture, a perpendicular line dropped from the ear passes through the shoulders, hips and ankle joints. (b) Normal body balance is upset by a sagging abdomen, a flattened chest, humped shoulders and a swayed back, producing a "mechanical backache."

Women are more apt to have a "mechanical backache" than men, owing to the prevalence among women of obesity, poor posture, and weak back and abdominal musculature.

DIAGNOSIS

Before making the diagnosis of "mechanical backache" the physician must evaluate carefully the patient's history, the results of physical examination and roentgenograms of the lumbosacral spine. No one of these three items must ever be omitted. The diagnosis of "mechanical backache" indicates that there is no actual disease or permanent structural abnormality which is responsible for the backache.

The usual history is one of a gradual onset of low back pain. This pain is usually localized to the lumbosacral region, but there may be some diffuse discomfort across the entire lower part of the back extending into the buttocks. The pain does not radiate into the lower extremities. The back pain is usually of many years' duration. The patient is seldom incapacitated by it, because it is not often severe. Attacks of acute back pain are more likely to represent an acute muscular and ligamentous strain superimposed on, and perhaps precipitated by, the factors producing a "mechanical backache." The pain is usually relieved by rest and by local application of heat. It is usually aggravated by fatigue, by long perods of standing or sitting and by bending, stooping or lifting. Changes in the weather have no effect on it. Coughing, sneezing and straining do not intensify it.

While undergoing examination the patient should be either completely disrobed or partially covered, so that an adequate view of the entire back may be obtained. Faulty posture is usually present, with increased lumbar lordosis and increased rounded dorsal kyphos. There often exist varying degrees of obesity with a prominent sagging abdominal panniculus. Obesity is not an essential finding, however, since the tall, thin person may have faulty posture with weak back and abdominal musculature. There is often localized tenderness in the region of the lumbosacral joint and over the iliolumbar ligaments. Movements of the back may or may not be restricted; limitation of back motion is not an essential physical finding. There is a normal range of hip motion. Asking the patient to rise from the supine to the sitting position without support of the arms will readily demonstrate the weakness of back and abdominal musculature. There is no evidence of any peripheral nerve irritation; knee and ankle reflexes are equal and active. The "straight leg raising" test is negative; that is, with the patient supine, the lower extremity can be elevated passively, with the knee completely extended, to a position of almost 90 degrees without undue discomfort. Should there be discomfort associated with this test, it occurs in the hamstring tendons back of the knee and is due to the normal tightening of these structures. The legs are measured from the anterior superior iliac spine to the medial malleolus. If a discrepancy of more than ½ inch is found, this fact is recorded as being of possible significance in causing a "mechanical backache."

After examining the patient, the physician must then study carefully the roentgenograms of the lumbosacral spine, paying particular attention to the presence of arthritic changes or structural abnormalities involving the lower part of the lumbar spine. In the simple "mechanical backache" nothing abnormal is noted.

DIFFERENTIAL DIAGNOSIS

Chronic fibrositis, so-called "muscular rheumatism," is often associated with the syndrome of "mechanical backache." In these cases there frequently are "trigger points," or localized areas of severe tenderness. These patients also complain of stiffness of the back muscles following a period of inactivity; this stiffness is usually most severe on arising and subsides during the day.

An acute muscular and ligamentous strain involving the lumbar spine may easily become a chronic one if the original injury is neglected and if one or more of the mechanical factors described are already present.

In cases of rheumatoid spondylitis, movements of the spine are usually much more restricted than in a "mechanical backache." The Marie-Strümpell type of spondylitis is found more frequently in men than in women and is characterized by tenderness over the spine, limited expansion of the chest and the typical roentgenographic appearance of sacroiliac sclerosis and calcification of the paraspinal ligaments.

The roentgenograms also serve to differentiate between a "mechanical backache" and a backache due to hypertrophic arthritis, spondylolysis, spondylolisthesis or a neoplastic or an infectious lesion.

TREATMENT

When the physician has made the diagnosis of a "mechanical backache," he may assure his patient that the condition is not a serious one and that it may be alleviated by certain simple measures. He should recommend that the patient sleep on a firm bed. A piece of plywood between the mattress and the springs is advisable, and a stiff cotton or hair mattress is better than an innerspring mattress. This firm bed prevents further strain on the back musculature.

Heat aids in the relaxation of the back muscles and stimulates circulation. The patient is advised to take a hot tub bath nightly, remaining in the water for a period of five to ten minutes. This should be followed by a twenty to thirty minute period of application of local heat, an infra-red lamp or a heating pad being used. It is not advisable to sleep on the heating pad all night. A few minutes of gentle massage over the back muscles may then be given by some other member of the patient's family, but this massage is not an essential part of the treatment. The patient then performs the series of exercises which have been prescribed by the physician and in which he or she has been carefully instructed. It is not enough to advise a patient to take exercises. The patient must be shown exactly how to perform the exercises, and the description of the exercises should be written down and given to the patient for ready reference. The patient is told not to attempt to do too many exercises at first because of the danger of overtaxing the already weakened back musculature. If possible, the exercises should be done both morning and night. It is imperative to do the exercises at least once every day.

The patient should be advised that little improvement may be expected for at least six or eight weeks, since it will take this period of time to strengthen the back musculature satisfactorily. In most cases, however, some improvement will be noted before the two month period has elapsed.

The following list of simple postural exercises will be found adequate for most cases of "mechanical backache." If possible, each exercise should be performed five times at the onset and gradually increased over a period of several weeks or months to ten or fifteen times, depending on the individual patient's tolerance of exercise.

A. Lie on back with knees bent:
   1. Tilt the pelvis, flattening the lower part of the back against the floor.
   2. With pelvis tilted, raise the head and shoulders from the floor.
   3. With pelvis tilted, raise legs alternately.
   4. With pelvis tilted, straighten out one leg and then the other.

B. Stand with heels 4 to 6 inches (10 to 15 cm.) from the wall and with back against the wall:
   1. Tilt the pelvis, flattening the lower part of the back against the wall.
   2. With back flat, leave the wall; come up and down on toes; return to wall.
   3. With back flat against the wall, raise legs alternately.
   4. With back flat, walk away from the wall.

If more vigorous exercises are indicated to strengthen the back and abdominal muscles, the following may be prescribed:

1. Lie on back, elevate both legs with knees completely extended.
2. Lie on back with arms overhead, rise to sitting position and touch toes.
3. Lie on abdomen with arms at side, raise head and shoulders, arching back.

A corset or back brace of any type should be considered only a temporary relief measure in a case of "mechanical backache." As a rule, a brace should be recommended only if the patient is quite obese and the abdominal musculature especially relaxed. The brace should be discarded when the back becomes strong enough to get along without it. Back muscles are strengthened only by exercise and not by the wearing of a support. The wearing of a brace for a long period of time delays the permanent cure, although the immediate effect may be beneficial.

General systemic measures may be an important adjunct of the treatment of a "mechanical backache." Vitamin supplements may be indicated, a weight reduction diet may be needed, and a mild sedative or a tonic may be prescribed if the physician deems it advisable. Proper treatment must also be instituted to control any other disease which may be present, such as chronic cholecystitis, peptic ulcer or an irritable bowel. It is important to tell the patients, however, that such treatment is directed toward improving their general health and is not specifically prescribed for the cure of the backache. Certain pelvic disorders occurring in women may be accompanied by pain in the lower part of the back, but the surgeon must be cautious in assuring a patient that she will be relieved of her backache by pelvic surgery alone. All too frequently the orthopedic surgeon is called on to treat a patient who has had one or more pelvic operations for the relief of low back pain, and this patient now has more pain in the lower part of her back than she had prior to her operations. In such a case the diagnosis of a "mechanical backache" usually may be made and a cure effected not by further surgical intervention but by the simple conservative measures outlined in this article.

SUMMARY

The most common type of low back pain is the "mechanical backache," caused by some alteration in the normal body balance. This balance may be upset by certain mechanical factors such as faulty posture, obesity, relaxed abdominal musculature, weak back musculature and inequality of length of the lower extremities. Because a "mechanical backache" is seldom incapacitating, the physician is apt to minimize its importance, and the patient consequently seeks treatment from some one outside the medical profession. If the general practitioner will diagnose this condition, he can institute a program of treatment that will effect a cure.

ABSTRACT OF DISCUSSION

Dr. H. Worley Kendell, Chicago: In lower back pain the predominant symptom for which the patient seeks relief is of intrinsic origin, with demonstrable evidence of muscle and connective tissue changes, although not usually evident by palpation or inspection of the lower back. In addition to careful superficial and deep palpation of soft tissues and inspection of postural alinement as described by Dr. Phalen, other tests are helpful, such as muscle-strength testing, which need not be detailed to give gross information and range of joint motion. The patient should always be examined in all four positions: prone, supine, sitting and standing. Gross abnormalities will be elicited by the tests described. However, recent researches by electromyographic methods suggest that a more quantitative test will soon be available to determine more detailed information of neuromuscular pathologic processes. In addition to the factors described by Dr. Phalen, the contracted iliotibial band and pronated foot must be considered among causes of mechanical backache. I agree that careful roentgen examination of the lumbar vertebrae is of paramount importance and that without such study a diagnosis of mechanical backache may remain questionable. The higher incidence of mechanical backache in women after 20 years of age may be attributed to improper postpartum restoration of body mechanics, which should more often be treated by the general practitioner. I do not quite agree with Dr. Phalen's statement that with a diagnosis of mechanical backache the physician may assure the patient that the condition is not serious and that the symptoms may be alleviated by simple measures. I agree that the majority of these patients will probably not end up in a wheelchair! However, if mechanical backache is left uncorrected, it may develop into a serious problem, particularly if complicated with a major psychosomatic factor. In my experience specific exercises are easily initiated but difficult for the patient to continue for the time necessary to gain the maximal benefit. The patient must be continuously supervised, and variations must be made in the prescribed exercises in order to maintain his interest. It is not enough to give him a written copy of the prescribed exercises. I have found it helpful for the patient to keep a daily log of his exercise program as well as his progress. Quantitative testing by the patient's physician and full explanation of progress are of paramount importance. Photography may be helpful as a medium of demonstrating postural changes. Use of full length or triple mirrors during the performance of therapeutic exercise by the patient is often helpful. I concur with Dr. Phalen that the general practitioner should be cognizant of this common problem and that he is capable to prescribe the necessary treatment for the majority of patients with mechanical backache.

Dr. Theodore Potter, Boston: About 85 per cent of backaches are mechanical in origin. In most instances they arise not from a severe injury but from a mild overstretching of muscles and ligaments associated with poor posture. The majority of backaches can be relieved quickly by temporary rest on a firm bed, by heat and by exercises; occasionally temporary support to the back is required. Good balance of the body does not usually occur spontaneously. One must work to attain it. Only in this way will one use his body with the least expenditure of muscular energy. In the unbalanced body with an increase of the anteroposterior curves of the spine, strain results from overuse of one group of muscles while the opposing group is not used effectively. The spinal joints in the lumbar region in poor posture are held habitually at their greatest extension. In this position there is no factor of safety, and any further attempt at extension will produce a sprain or tear of ligaments, particularly about the lumbosacral joint. Pain and other symptoms will appear more quickly if any other abnormalities are present, such as changes in the lumbar intervertebral joints, osteoarthritis or deformities in the lower extremities. Although the symptoms are usually mild at first with minimal pain, slight muscular spasm and a little limitation of motion, they gradually become severer. The mechanical backaches, so often neglected, are sufficiently incapacitating to warrant intensive study and planning of methods of prevention in industry. One should never prescribe treatment without examining the patient's back carefully. Roentgenograms are always desirable and are necessary if the disability has been prolonged or the symptoms have been severe. A flat bed which does not sag is essential. This provides a good splint for the back. Heat should be applied to the back, as Dr. Phalen advised, for as long as muscular spasm is present. Sometimes getting in and out of a bathtub is too painful, and heat must be applied while the patient is lying down. In prescribing exercises exact directions should be given as in prescribing medicines. Patients must be told when, how and for how long to perform the exercises. The purpose of the exercises is to improve the alinement of the body by increasing the strength and coordination of certain groups of muscles, particularly those about the abdomen and pelvis. If the physician will appreciate the importance of these and similar disabilities and will learn the rationale and technic of the necessary physical therapeutic procedures, particularly exercises, this part of medical practice will cease to be a fertile field for the cultist and irregular practitioner.

Dr. Janet Travell, New York: One important approach to the correction of the mechanical backache is almost never mentioned in any discussion of this problem. It is an approach which attacks the major cause, poor posture, and it has to do with improvement of seating or furniture design. The majority of persons spend hours sitting each day, and muscles cannot be expected to hold one all day long in the correct position. If the chair is not correctly designed the body will sag as the muscles tire, with consequent stresses and strains on muscles and ligaments of the spinal column. One can go into almost any home or office in this part of the world and not find one chair designed to give adequate support to the back. I became interested in this problem because patients with chronic backache may serve as guinea pigs and provide a laboratory for testing out one's ideas on seating design. The common straight chair is too nearly vertical and pushes one forward into a round-shouldered slump. Ideal seating design should provide an angle of more than 90 degrees between the seat and the back, preferably 15 to 20 degrees more, so that one may lean against the slope and thus permit the force of gravity to take some of the load off the muscles. The ideal chair should provide a stable support for the lower part of the back, with a maintenance of the normal lumbar curve by a moderate amount of pressure; the insecure swivel-back chair will never give such support. The design should provide, if possible, support for the upper part of the back at shoulder level, and that requires a flat-backed chair in its upper portion. The windsor or barrel-shaped scoop chair is to be avoided; it distorts the upper part of the back by rounding the shoulders forward. To those who sit twisting and turning in chairs that have at least three major faults, I would repeat an old Greek proverb which reads, "The mind can absorb no more than the seat can endure."

Q Fever.—Derrick in 1937 described Q fever as a new disease encountered among abattoir workers, and subsequent epidemiologic investigations by the Australian workers implicated cattle in the transmission of the disease to man. With the possible exception of one case, and the findings of Cox which suggested that Q fever may occur in the United States, naturally-occurring Q fever was unknown in this country before 1946, when two outbreaks occurred among persons connected with meat-packing houses at Amarillo, Texas, and Chicago. In 1947, the disease was discovered in Southern California by Young and Shepard and Huebner; cases were encountered principally in the Los Angeles area, where the disease now appears to be endemic. Epidemiologic inquiries revealed that many of the infections occurred in individuals associated with cattle by virtue either of occupation or proximity of residence. Additional, more direct evidence incriminating cattle has been obtained by Huebner et al who found a significant proportion of diary cattle studied in the Los Angeles area to be shedding the rickettsiae in the milk.—Edwin H. Lennette, M.D.; William H. Clark, M.D., and Ben H. Dean, D.V.M., *The American Journal of Tropical Medicine*, July 1949.

METATARSUS ADDUCTOVARUS

"Skewfoot"

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It has become apparent to many orthopedic surgeons that the occurrence of the congenital deformity of the foot characterized primarily by adduction of the fore part of the foot, without the equinus and the varus deformities of clubfoot, has been increasing. Only one authoritative American article has appeared on the subject,[1] and that in 1933 when the deformity was still uncommon. Kite[2] has called the deformity "one third of a clubfoot" and has collected an imposing series of over 300 cases. When published, his work will furnish a valuable study of the causation. The entity has long been recognized in Germany; it became prevalent in that country thirty to forty years ago, just as it has in North America recently. More than twenty articles on this subject have been written in the German language. Kauffmann[3] has supplied an excellent and comprehensive summary with a complete bibliography. Because of the similar evolution of the deformity in this country, it would be well to review its historical aspects. The terminology should be clarified, for this important entity must be named accurately. Physicians must also understand the pathologic anatomy so that treatment may be effective.

Adduction deformity of the fore part of the foot with valgus position of the heel is first mentioned by Henke[4] in 1863 and by Hueter[5] in 1870. The first case report of an adult with metatarsus varus, including photographs and roentgenograms, was published by Cramer in 1904.[6] He described a similar case in an infant in 1909,[7] and called it metatarsus adductus because the metatarsals were adducted without bowing and there was no varus deformity of the fore part of the foot. During the next twenty years, a lively controversy developed over both the terminology and the pathologic anatomy. Kauffmann[3] pointed out that the deformities called metatarsus varus and metatarsus adductus were different degrees of the same entity, and he suggested that the name pes adductus be used for both. This term had been coined by Duncker[8] and was published in 1912 in the first comprehensive article on the subject. Although the term pes adductus is less accurate, it is easier to say and was popular in Germany. For some reason, the old term metatarsus varus has been revived in this country.

Metatarsus varus as an isolated congenital deformity is extremely rare. It implies torsion of the fore part of the foot in the long axis so that the inner border is off the ground and the sole is directed inward. The patient walks on the outer border of his foot with the heel in neutral position or valgus position (fig. 1 *A*). The term metatarsus varus should be reserved for this particular deformity.

Metatarsus adductus (fig. 1 *B*), in which there is a sharp angulation of the metatarsals into adduction without the associated varus distortion, is relatively common as a mild deformity. When it becomes severer it is usually associated with metatarsus varus. Then it should be called metatarsus adductovarus. Increasing the deformity introduces an inevitable element of cavus distortion which would make the name metatarsus adductocavovarus. Accuracy demands some combination of descriptive terms, but the resulting name is unwieldy. However, the name of one rare type of deformity (metatarsus varus) should not be used to identify the entire group; instead, a short but accurate term for general use must be found. Rather than adopting the inaccurate Latin phrase pes adductus, it would seem wise to use a simple term like clubfoot. Careful consideration of a great variety of possible names led to the selection of the term skewfoot. "Skew" is in the medical dictionary (skew deviation), and an ordinary dictionary gives the meanings—oblique, slanting and angled—which describe the deformity accurately (fig. 2).

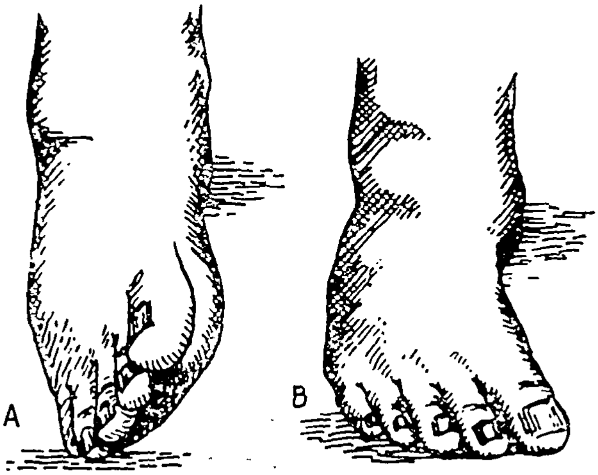

Fig. 1.—In true metatarsus varus (*A*) there is no adduction of the fore part of the foot. The inner border of the foot is elevated; the sole is directed inward, and the patient walks on the lateral border of the foot. The heel is in neutral position or slight valgus position. This is an exceedingly rare congenital deformity. Metatarsus adductus (*B*) implies deviation of the fore part of the foot toward the midline. The angulation takes place abruptly with the apex at the medial cuneiform. In a true metatarsus adductus there is no varus distortion. This is a common congenital deformity. (See fig. 5.)

PREVALENCE

In 1905 Helbing[9] could find only 4 cases of metatarsus varus in 5,000 orthopedic admissions. After that only isolated cases were reported, and in 1921 Valentin[10] could collect only 26 cases from fourteen authors. In the following seven years the published articles reported greater numbers of cases: Engel,[11] 13; Ettorre,[12] 7; Madier and Massart,[13] 6; Heidrich,[14] 17;

Read before the Section on Orthopedic Surgery at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1949.

[1] Peabody, C. W., and Muro, F.: Congenital Metatarsus Varus, J. Bone & Joint Surg. **15:** 171 (Jan.) 1933.

[2] Kite, J. H.: Personal communication to the author.

[3] Kauffmann, H.: Der Pes adductus congenitus, Ergebn. Chir. u. Orthopäd. **22:** 463, 1929.

[4] Henke, W.: Contractur des Metatarsus, Ztschr. f. rat. Med. **17:** 188, 1863.

[5] Hueter, C.: Klinik der Gelenkkrankheiten, Leipzig, F. C. W. Vogel, 1870.

[6] Cramer, K.: Metatarsus Varus Congenitus, Archiv. f. orthop. u. Unfall-Chir. **2:** 370, 1904.

[7] Cramer, K.: Metatarus adductus congenitus, Ztschr. f. Chir. u. mechanische Orthopäd. **3:** 329, 1909.

[8] Duncker, F.: Pes Adductus, Ztschr. f. Orthopäd. Chir. **30:** 447, 1912.

[9] Helbing, C.: Ueben den Metatarsus varus, Deutsche Med. Wchnschr. **31:** 1312, 1905.

[10] Valentin, B.: Metatarsus varus congenitus, Ztschr. f. Orthopäd. Chir. **40:** 409, 1921.

[11] Engel, H.: Zur operativen Therapie des Metatarsus varus congenitus, Orthopäd Universität zu Berlin, August 1923, pp. 429-433.

[12] Ettorre, E.: Metatarso varo congenito, Arch. di ortop. **37:** 185, 1921.

[13] Madier, J., and Massart, R.: Étude anatomique du métatarsus varus congénital, Bull. Soc. Anat. de Paris **93:** 119, 1923.

[14] Heidrich: Der Pes adductus congenitus, abstracted, Zentralbl. f. Chir. **51:** 536, 1924.

Wolf,[15] 11. and Bergmann,[16] 28. Kauffmann[3] reported 42 cases in 1929. In 1932 Gruber[17] supplied 56 from Lange's clinic, and in 1936 Dengler[18] added 32 more.

There has been a definite increase in the incidence of skewfoot in this country in the last ten years. In our cases from 1939 to 1948 the ratio was 2 skewfeet to 1 clubfoot, but the difference has been even greater recently. This is in contrast to the observations of Gruber,[17] with 10 clubfeet to 1 metatarsus adductus, and Bergmann,[16] with 7 to 1.

Kite[2] has proved that the incidence of clubfoot has not changed, while that of skewfoot has increased with almost geometric rapidity. That there have been many unrecognized and untreated cases in the past twenty years is proved by roentgenologic examination in cases of flatfoot and bunion which are being seen now. In the case of skewfoot inadequate treatment, or no treatment other than the wearing of shoes, results in a lateral deviation of the toes which masks the persistent adduction of the metatarsals. The result is the flat, crooked, "serpentine" foot (fig. 3) described by Peabody.[19] Anteroposterior roentgenograms of the fore part of the feet reveal the true deformity. In the foot with bunion, persistent skewfoot will be recognized if the great toe is pushed back into its original position (fig. 4 *A*).

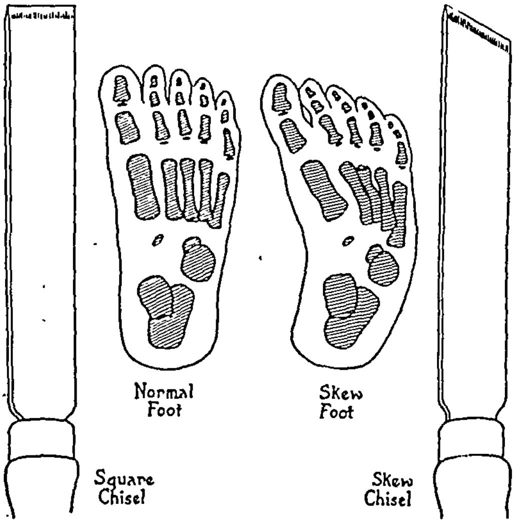

Fig. 2.—"Skew" means oblique or slanting. "Skewfoot" is a simple term which describes the group of deformities known as metatarsus adductus, metatarsus varus and metatarsus adductovarus.

PATHOLOGY

The characteristic change in the foot is the adduction of the metatarsals, most definite in the first and least in the fifth (fig. 5). In the fat infant this is more readily seen in roentgenograms than clinically. In the newborn the details of bony abnormality are not evident (fig. 6). In the older person the scaphoid is frequently displaced laterally with reference to the astragalar head, and the medial cuneiform is likely to be small and misshapen. This bone is the site of the maximum angulation. In the extreme case with the addition of varus and cavus deformities the cuneiform bones are apt to be piled up and superimposed, as may be seen in the anteroposterior roentgenologic view. Between this position and the normal there are all degrees of deformity.

In early papers the distinguishing feature between metatarsus adductus and metatarsus varus was bowing of the bases of the metatarsals with the convexity dorsally and laterally in the latter. This bowing actually occurs only in the severer case with cavus deformity. In the milder case with adduction only there is apparent bowing caused by the illusion of overlapping. When the fore part of the foot is supinated the normal slight dorsal convex bow is brought into profile and exaggerated. When the foot is pronated the bowing disappears.

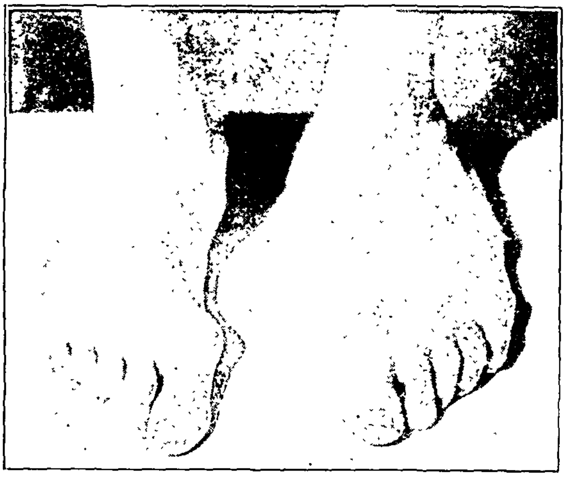

Fig. 3.—H. K. a boy aged 16, had serpentine foot with extreme pronation of the posterior part of the foot. The changes occurred as shoes were worn on metatarsus adductus feet.

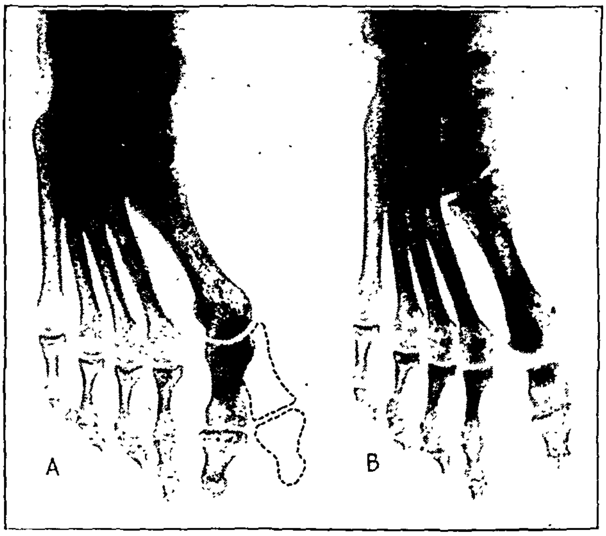

Fig. 4.—S. W., a girl aged 14, with bunions (*A*) resulting from bilateral skewfoot. The right foot is shown before operative correction. The dotted line shows the original position of the great toe. (*B*) represents the same foot after a Keller operation combined with transverse osteotomy of the base of the first metatarsal. A wedge of bone was inserted in the osteotomy to maintain the position. The result was excellent.

In addition to the bony changes Peabody and Muro[1] have recorded an abnormal attachment of the anterior tibial tendon. Instead of leading to the medial cuneiform it is displaced anteriorly, attached to the first metatarsal and then spread out on the sole of the foot. The pull of such a tendon would cause the essential deformity. This may explain the observation of Kite [2] that the feet may be normal at birth and become deformed two or three months later. Occasionally, the adduction of the fore part of the foot has not shown up until the child has started to walk. Except for the position of the scaphoid, the changes are consistent with those of clubfoot and Kite's designation, "one third of a clubfoot," is appropriate.

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[15] Wolf, J.: Zur Pathologie und Therapie des Metatarsus varus congenitus, Archiv. f. Orthopäd. u. Unfall-Chir. **24:** 244, 1927.

[16] Bergmann, E.: Bemerkungen zum angeborenen Metatarsus varus und seiner Behandlung, Archiv. f. Klin. Chir. **141:** 472, 1926.

[17] Gruber, L.: Haufigkeit und blutige Behandlung des Pes adductus, [illegible] Klinik der Ludwig Maximilians Universität [illegible] 1932, pp. 3-15,

[illegible] Therapie der Pedes adducti, Ztschr. f. [illegible] 121, 1936.

[illegible] nunication to the authors.

The heel is always in some degree of valgus position. Helbing [9] remarked that if one were to cover up the fore part of the foot and look only at the heel, he would think that he was dealing with a flatfoot. Steindler [20] has shown that walking with an uncorrected metatarsus adductovarus must cause an exaggeration of the valgus deformity of the posterior part of the foot. The midtarsal deformity is exceedingly rigid. As the first metatarsal head is brought down on the ground, the valgus position of the posterior part of the foot must be exaggerated. As pressure is put laterally on the first metatarsal head, this deformity is further increased.

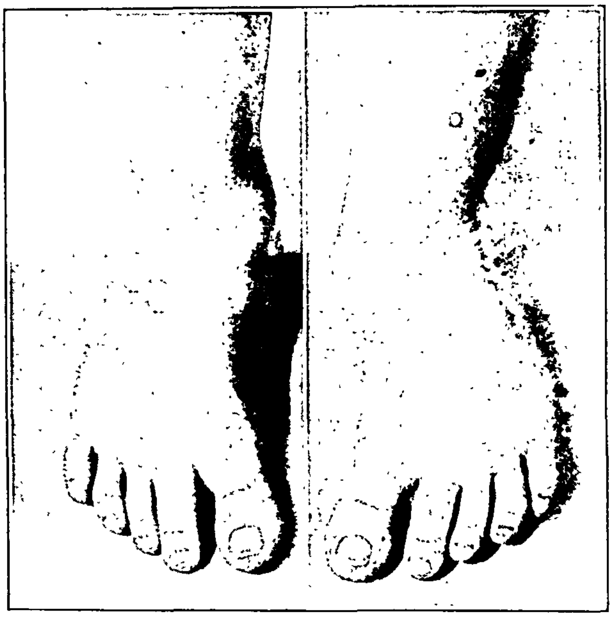

Fig. 5.—S. K., a boy aged 3, with bilateral metatarsus adductus. The medial borders of the feet are concave, the lateral borders convex.

After adequate treatment of a true clubfoot, any one of the three components may recur. Varus position of the heel is usually the first to reappear. Not infrequently it is the equinus distortion. When the adduction component of the fore part of the foot relapses without the appearance of the other two components, the navicular is frequently lateral to the talar head, as in a congenital skewfoot, and not medial, as it should be in a primary clubfoot. This relationship needs further study. It should be noted that any varus distortion of the heel removes the deformity from the skewfoot group and places it with the mild clubfoot group.

TREATMENT

The infant with a slight skewfoot deformity may be treated variously with success. Manipulation by the mother may be all that is needed. The heel should be held in varus position, and with the cuboid as a fulcrum, the fore part of the foot should be deflected sharply into abduction. Pressure should be put on the metatarsus and not on the toes (fig 7). Casts are not necessary. Swung-out shoes may be used in the mild deformity but are hardly necessary. The foot with severer deformity and with rigidity of the midtarsus should be manipulated in the manner described, and casts should be applied for a week at a time. This treatment should be continued until a roentgenogram shows overcorrection of the deformity. In the fat infant foot the degree of deformity is frequently difficult to determine clinically. Swung-out shoes may correct the malposition in part, but they have a tendency to deflect the toes laterally and leave the metatarsals in the original position. This pseudocure may lead to bunion formation later, particularly in women (fig. 4). We urge that all such "corrected" feet be examined roentgenologically.

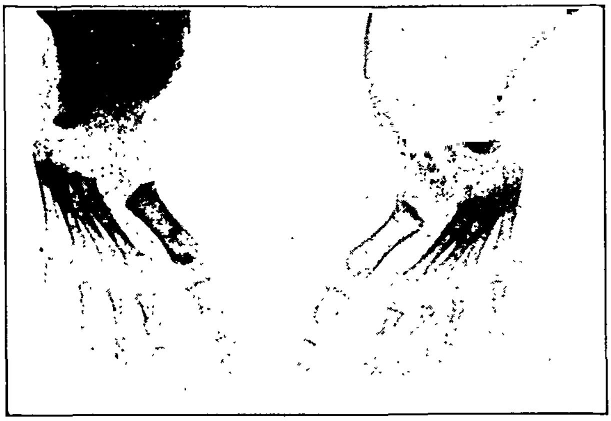

Fig. 6.—Anteroposterior roentgenograms of the feet shown in figure 5. The obliquity of the metatarsals is characteristic of skewfoot. The apparent bowing is an illusion.

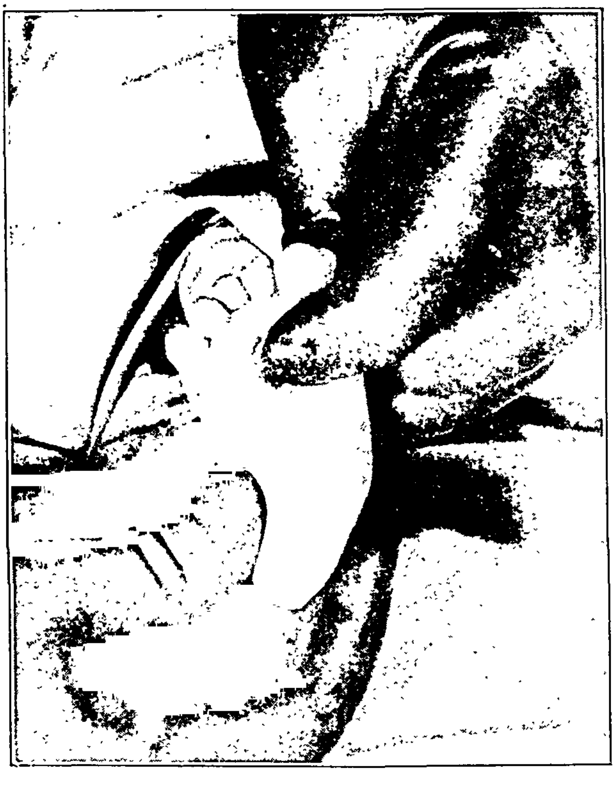

Fig. 7.—Manipulation of the infant foot. The heel is held in the varus position. Pressure is put over the cuboid while the fore part of the foot is forced into abduction. Pressure should be placed against the metatarsus and not against the toes.

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[20] Steindler, A.: Personal communication to the authors.

The severer deformity must not be treated like a clubfoot. Correction by ordinary casts or wedging casts is likely to exaggerate the valgus distortion of the heel. Any pressure that is applied to correct an adductovarus deformity of the fore part of the foot will inevitably produce an abductovalgus distortion of the posterior part of the foot. Other joints in the foot will yield before the rigid, angulated midtarsus. The result will be a flatfoot which is worse than the original deformity.

Skewfoot in children over the age of 6 months should be treated by manipulation, while the child is under anesthesia. A padded wedge is helpful. While the heel is held in the varus position, force is applied directly at the site of the deformity. A cast is applied for two to four weeks. This treatment is repeated once or twice, or more, until the foot is overcorrected. The foot is maintained in the overcorrected position by *frequent parental manipulations*, which need not be painful. The midtarsal joints have been mobilized and can readily be placed in the overcorrected position. In none of the manipulated feet has there been any stiffness.

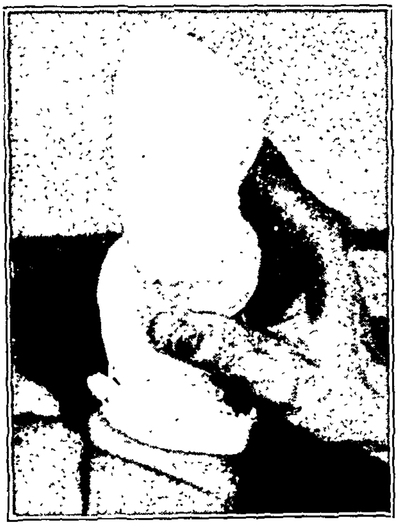

Fig. 8.—A long leg cast with the knee in *flexion. While the plaster is applied the foot is held in the varus position. As the plaster sets, pressure is placed over the cuboid. While the heel is molded into the varus position, the fore part of the foot is abducted sharply.*

General anesthesia is necessary during the active treatment for two reasons; first, because manipulation is painful, and second, because struggling during the application of the cast will produce wrinkles in the plaster which are likely to cause pressure sores.

If there is any internal torsion of the tibia, the cast should extend from the toes to the midthigh with the knee in flexion. Such a cast is efficient for routine use. It is well to apply the thigh and leg portion first. After this has begun to set, the foot part is added. While the plaster is applied, the foot is held in the varus position without correcting the deformity. The heel is molded sharply in the varus position just before the plaster sets, and while pressure is made against the cuboid the fore part of the foot is forced directly into abduction. Pressure must be put against the first metatarsal head and not against the toes. The plaster then clearly shows the corrected position (fig. 8). After the cast has set, it must be trimmed out well below the base of the fifth metatarsal. We apply the plaster over sterile flannelet and benzoin tincture without causing pressure sores. A series of two casts is usually sufficient, although occasionally three will be necessary. The fore part of the foot should be well overcorrected. A roentgenogram in the anteroposterior projection should show the metatarsals parallel and in line with the toes. Roentgenograms should be repeated in six months to verify the maintenance of correction. *During this interval* the parents should continue manipulating the foot.

The argument that the feet will correct spontaneously if left alone is easily refuted. If the thoughtful orthopedic surgeon will study the deformed feet of adults who come to his office, the shocking frequency of persistent metatarsus adductus will require no additional comment. Treatment of the deformity in the infant will eliminate the need for more radical treatment of flatfoot and bunion in the older person.

Obviously the extreme adductocavovarus deformity of the middle and fore parts of the foot, with displacement of the anterior tibial tendon, cannot be permanently corrected by simple manipulations in childhood. Tendon transplantation is advocated by Peabody.[1] If the condition is seen early, the bony deformity can well be corrected as indicated. In the neglected case wedge resection in the region of the cuboid is indicated. In the persistent skewfoot, with flatfoot and intoeing, arthrodesis of the first metatarsocuneiform joint with osteotomy of the middle three metatarsals has given satisfactory results. Neglected feet with bunions in adolescent girls have been well corrected by the Keller procedure with the addition of an osteotomy of the base of the first metatarsal (fig. 4 *B*). A small wedge of bone may be inserted at the site of the osteotomy. Occasionally the second and third metatarsals must be cut.

If skewfoot has been ignored during the infancy of the patient, it is well to perform these fundamental operative corrections during adolescence. When adult life has been reached, osteotomy of the metatarsals becomes a radical *procedure*. Palliative *bunion* operations and shoe corrections will be found more appropriate for adults. Complete correction during infancy remains the treatment of choice. As skewfoot is recognized and treated by the orthopedic surgeon in the nursery, *much disability in adult life will be eliminated.*

SUMMARY

1. Metatarsus adductovarus, or skewfoot, is a clinical entity which is now more prevalent in this country than clubfoot.

2. Untreated skewfoot may persist as an annoying deformity with hallux valgus, bunion, flatfoot and chronic foot strain.

3. Adequate early and persistent manipulative treatment with casts will completely correct the moderate deformity.

4. Follow-up *by clinical and roentgen examination* is important.

5. Severe or untreated skewfoot in the older child requires operative treatment for adequate correction.

80 Sheboygan Street (Dr. McCormick).

ABSTRACT OF DISCUSSION

Dr. Philip Lewin, Chicago: Dr. Blount's paper on an important subject has given us terminology, pathologic anatomy and specific treatment for metatarsus adductovarus. He has presented treatments applicable to each age period, before standing, before walking and after walking, based on specific anatomic situations. In manipulating these feet the surgeon and the parent should place their thenar eminence behind the base of the metatarsal V and use it as a fulcrum. John L. Porter said that a moderate amount of the pigeon toe position is a desirable thing, and Dr. Albert Freiberg said that he learned early in the practice of orthopedic surgery not to do too much to pigeon toes. Congenital defects are notorious for their recurrence index. Sir Robert Jones often said that a cured *clubfoot does not relapse. I would like to say beware of* overcorrection.

Dr. C. W. Peabody, Detroit: I am in accord with Dr. Blount's postulates. I consider his study to be constructively analytic in many ways, but I would like to argue a few points in it. First, the term skewfoot might be good if it could mean something to everyone. But since the deformity is initially of the forepart of the foot only, the anatomic term metatarsus at least localizes it. I would still contend that some subdivisions must also be made for clarity. To this aim it should be predicated that every newborn infant has feet of this postural character, which can ordinarily be expected to be altered in the first few months of life. Second, the prehensile type of big toe is also a passing infantile characteristic in the majority of cases. But there are exceptions, well described by Truslow about thirty-five years ago, in which the epiphysis at the base of the first metatarsal continues to grow asymmetrically, tending toward an axis comparable to the metacarpal one. When a shoe, particularly a girl's or woman's shoe with a tapering box-portion, is worn over this splayed first metatarsal, which Truslow designated as primus metatarsus varus, the inevitable consequence is hallux valgus followed by bunion. But there is in this instance no other metatarsal deformity; curiously enough, this condition is strongly hereditary and familial, although it appears only in women. There is an intoeing deformity of the forepart of the foot which is found in an otherwise normal pedal extremity in infancy, or until shoes, walking or improper treatment produces compensating deformities of the posterior part of the foot. It may occur as a simple adduction deformity at the joint of Lisfranc and at a mild stage may be spontaneously corrected by the common straight-lasted shoe of infants. I agree with Dr. Blount that the incidence and prevalence of metatarsus varus in its milder forms is on the increase and that it is not fully accounted for by greater interest and recognition by obstetricians, pediatricians and parents. But what strikes me even more forcibly in a retrospective review of thirty years of practice is that accompanying this mounting incidence of metatarsal deformity as a single initial entity is a parallel decrease in the incidence in my area of congenital talipes equinovarus. And it is true, as Dr. Kite stated, that this single deformity of the forepart of the foot is the distal one third of the deformity of complete clubfoot. Could it be possible that a recessive trait is disappearing in stages of deformation?

Dr. Walter P. Blount, Milwaukee: Dr. Lewin has suggested that the thenar eminence be used for counterpressure in manipulating a skewfoot. I use the same technic. However, some parents have difficulty in holding baby feet in this manner; unless the parents are exceedingly deft, I advise them to hold the foot between the thumb and finger. Pigeon toe may be due to axial rotation of the entire extremity, and frequently axial rotation is associated with metatarsus adductus. This problem of the rotational component, which was raised by Dr. Peabody, is tremendously important. The etiologic basis is a mystery. Warkany is reticent about making any statement. His work with rats has been most suggestive, but he has always insisted that no conclusions may be carried over to human beings. Skewfoot is certainly on the increase; it was a mystery in Germany twenty years ago, when it was thought to be associated with the war in some way. A war has just been concluded, but there is no logical connection as far as I can see. I agree with Dr. Peabody that in cross files the classification should be variously subdivided. There should be a main heading, skewfoot, with subheadings metatarsus adductus, metatarsus varus and metatarsus adductovarus. I have suggested the term skewfoot to include all these related deformities. The illusory bending of the metatarsals is usually due to supination of the fore part of the foot. When roentgenograms are taken with the foot in pronation the true shape is shown. In the extreme skewfoot deformities with cavus distortion there is actual bending of the metatarsals. At times roentgenograms are taken with the patient standing; however, most children behave better if they are allowed to sit down. My associate and I have them sit on a low stool and then push on their knees so that we have almost the equivalent of standing roentgenograms. Dr McCormick and I do not prescribe shoes of any kind to correct the deformity of the feet. If there is an associated torsion of the tibia, which is frequently the case, night shoes are connected by a rigid bar, with the feet turned outward about 30 degrees. The Denis-Browne splint or brace may be used in the same way. In my opinion these devices have no place in the active treatment. When there is decided rigidity of the midtarsus, the foot must be vigorously manipulated if the best result is to be obtained. In mild cases the deformity may be corrected by swung-out shoes. In some instances recovery is undoubtedly spontaneous. If the deformity is of any significance, however, swung-out shoes tend to push the toes over, leaving the metatarsus in deformity. The result is a serpentine foot as described by Peabody. I have no objection to the use of swung-out shoes after the deformity is corrected; they might replace the manipulations by the parents in maintaining the correction. Even then I do not like to emphasize use of the special shoes because the parents are likely to continue this form of treatment and neglect a periodic checkup of the child's feet and more significant treatment. I prescribe no shoe modification.

NORTH CAROLINA CANCER CONTROL PROGRAM

IVAN PROCTER, M.D.
Raleigh, N. C.

North Carolina took its initial step in clinical cancer control on April 27, 1948, with the opening of the New Hanover County Cancer Center. This statewide project is directed by the Division of Cancer Control of the state board of health, with the Cancer Committee of the State Medical Society and the North Carolina Division of the American Cancer Society as collaborators. Cooperating agencies within the state board of health are the Divisions of Oral Hygiene, Industrial Hygiene, Laboratory of Hygiene, Tuberculosis Control, Local Health, Epidemiology and Preventive Medicine.

The Cancer Committee of the state medical society assists the state health officer and the director of the Division of Cancer Control in formulating plans and policies that are practical and acceptable to the private practitioner, on whom a great part of the success of this program depends. The state division of the American Cancer Society with other local organizations assists by furnishing volunteer workers for clinics, by fostering educational programs and by formulating contacts in the all-important follow-up service.

The funds for operation are provided from three sources—federal appropriation, state appropriation and donations from the North Carolina Division of the American Cancer Society.

THE PROBLEM IN NORTH CAROLINA

With 800,000 citizens in North Carolina over 40 years of age, we were confronted with the problem of finding a speedy, efficient and economical method for screening a large number of citizens in the cancer age. On the opposite side of the picture, we were confronted with a limited number of available physicians, the majority of whom are constantly overworked in private practice. To follow the pattern of the so-called standard detection center was to face defeat in our main objectives: (1) to find the cancers in North Carolina and (2) to diagnose them accurately and to recommend adequate treatment. The routine complete medical history, physical examination and laboratory tests would require an excessive amount of the physicians' and technicians' time, and the use of funds appropriated

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Director, Division of Cancer Control, North Carolina State Board of Health.

The state board of health acknowledges the assistance of Dr. Mildred Schram in the North Carolina cancer control program.

solely for cancer control, not for individual health maintenance. We consider the matter of general health maintenance a prerogative of the patient and his personal physician.

DEVELOPMENT OF THE PROGRAM

Prior to the activation of the Division of Cancer Control on March 3, 1948, the director, after careful study of the records and information accumulated by the American College of Surgeons and the American Cancer Society, and after personal investigation of control programs and clinics in the Eastern states, prepared in detail the North Carolina Cancer Control Program—its objectives, the methods of establishing Cancer Centers, and the duties of professional and administrative personnel.

The statewide program is divided into four phases:

1. The establishment of major Cancer Centers (Detection and Diagnostic-Management Centers) in ten strategically located and heavily populated areas where all specialists are available. At the time of writing, eight of these major Cancer Centers are in operation. The sixth will open July 15, 1949.
2. The establishment of ten Detection Centers in counties throughout the state where physicians are available. These will be located so that citizens will not have to travel more than 50 miles to reach them. So far, only two Detection Centers have been organized.
3. The development and operation of laboratory services to aid in the diagnosis of early cancer. Under the direction of a qualified physician-cytologist the routine examination of genital smears in female cancer center applicants has been instituted. Cytologic examinations of genitourinary, pulmonary and gastric smears will be made when indicated.
4. The establishment, at some time in the future, of nursing homes for the care of patients with advanced stages of the disease.

During the first year of the program no treatment has been carried out by the staffs of the Cancer Centers. Beginning July 1, 1949 a legislative appropriation was made available for the treatment of indigent patients by private physicians. These patients will have to be certified as indigent by the local welfare department.

Our program selects a group of citizens in whom cancer most frequently occurs; that is, men and women 40 years of age and older. We limit the examination of these patients to the five parts of the body where cancer most commonly develops: the skin, mouth, breast, genitalia and rectum. Cancers at these five points are usually detectable and most often curable. Such a limited examination will probably reveal 90 per cent of cancers that are detectable in an early stage. As Dr. Charles S. Cameron has repeatedly stated, it will reveal more cancers per physician hour than will a complete physical examination with routine laboratory and roentgen studies, and at a much lower cost. In a standard detection clinic a physician examines a maximum of 4 patients in a two hour session, while the same physician in a streamlined, or limited, detection clinic examines a maximum of 10 patients.

Cancers of the stomach and lung, with their present high mortality rate, deserve the best knowledge and skill of the medical profession; but from a practical point of view they necessarily take a secondary place in this program. An effort is made to detect pulmonary cancers by routine interrogation of the examinee and through the mass roentgen ray surveys of the state tuberculosis control division. Any roentgenogram of the chest which is suggestive of pulmonary neoplasm is followed up with a full-sized film, which is referred to the director of the Division of Cancer Control. Although we study a limited number of examinees roentgenologically, there are not yet enough radiologists or radiologic apparatus available anywhere to screen all the persons with symptoms and signs suggestive of gastric carcinoma. With the aid of the powerful Schmidt-Helm camera and radiographic equipment it is now practical to make roentgenologic studies of the stomach quickly and at a comparatively low unit cost. This specialized apparatus has been purchased by the Division of Cancer Control and will be placed in a mobile unit and ready for operation Oct. 15, 1949.

It is planned to employ our limited detection examination as a three year experiment in order to render the greatest amount of cancer control service to the greatest number of citizens in the shortest time practical and in order to determine its true value as a plan for future control programs.

TABLE 1.—*Professional Information Card*

(Face)

If you desire to participate (or help in any way) in the Cancer Control Program, fill in this card and return to the Secretary of the County Medical Society.

Name..
Office Address..............................Telephone..........
Residence...................................Telephone..........
Age........Joined........County Medical Society, Year........
College.........................Degree............Year........
Medical School..................Degree............Year........
Internship..

(Reverse)

Resident:
Postgraduate Study and Experience:
Specialty:
Diplomate of Specialty Board:
Member of A.M.A.?.....Of A. C. Phys.?.....Of A. C. Surg.?.....
Where did you practice previously?
Teaching position:
I think I could render the greatest service in the capacity of:
1.
2.

PROCEDURE FOR ESTABLISHING CLINICS

Cancer Centers are established only on invitation of the local county medical society. The staffs of the Detection and Diagnostic-Management Centers are all elected by the local society. The local director must be a diplomate of his specialty board and must be approved by the Division of Cancer Control, since he necessarily works in close cooperation with the state director. All Cancer Center personnel, including the stenographer-clerk, the nurse and the receptionists, are either selected or approved by the local director.

Major Cancer Centers (Detection and Diagnostic-Management Centers) are to be established in ten counties selected because of their geographic position and population, and also because of the availability of pathologists, radiologists and other specialists necessary to staff the Diagnostic-Management Center.

After communicating with the president of the local county medical society, the director of the Division of Cancer Control meets with the officers of that society and with its executive and cancer committees and presents for their consideration the details of the state control program. After these committees have approved the plan, they refer the matter to the members of the society. At a special meeting the director again presents the program, which in every case has been approved after a period of questions and debate. A committee is appointed to select the staff on a democratic basis and to take the steps necessary to place a clinic in operation. Two counties have failed to place the center in operation. Professional information cards (table 1) are sent to each member of the society, requesting personal and professional data and an indication of the physician's willingness to participate in the work of the Cancer Center.

Election of Cancer Center Staff.—The committee, using the returned information cards with complete fairness to every one desiring to participate, selects four physicians to serve on the first staff of examiners for the Detection Center, and four alternates. Six specialists (a pathologist, radiologist, internist, surgeon, gynecologist and dermatologist), with an alternate for each position, are then selected to staff the Diagnostic-Management Center. Other specialists serve in the order in which their cards are drawn. An otorhinolaryngologist, orthopedist, urologist, neurosurgeon and pediatrician are selected to serve as consultants to the staff of the Diagnostic-Management Center. The director of the local cancer center is elected by the members of the staff. Staff members of the Diagnostic-Management Center should either be certified by their specialty boards or qualified for certification.

The local health officer participates on the same basis of desire and qualification as every other member of the local county medical society. He cooperates in the promotion and operation of the Cancer Center in every way practical.

Clinic Personnel.—Each major Cancer Center is staffed with a full time senior stenographer-clerk, but when the Detection Center operates alone a part time clerk is employed. On clinic days one or two graduate nurses, volunteer receptionists (clerks), and nurses' aides are present to assist physicians and perform routine duties.

Location of Cancer Centers.—The first choice for location of a cancer center is the outpatient department of a local hospital; the second choice is the local city or county health department.

OPERATION OF CANCER CENTERS

Each clinic operates one day a week for a period of two hours (table 2). Major Cancer Centers operate two hours for detection and two hours for diagnosis. Physician members of the staff are requested to be punctual, because each clinic closes at the end of the two hour period in order not to impose on the physicians.

The control program is publicized through the press, radio, local cancer society and local health department. All publicity is approved by the director of the local Cancer Center or the public relations committee of the local medical society.

Detection Center.—Any person who is 40 years of age or over and who has been a resident of the state for one year is admitted, without regard to race, color, creed or economic status. (The age limit for women will be reduced to 35 years when the present backlog is eliminated.) Forty examinees may be admitted for one two-hour session conducted by four detection examiners. Clerks and aides register the patients and complete the routine personal and medical histories before the arrival of the detection examiners. These histories are made out on special forms, with reference mainly to the five anatomic points. When a more complete history is indicated, it is taken by the physician. The only routine laboratory or roentgenographic studies are chest films, made in connection with the Division of Tuberculosis Control.

The patients are undressed completely and placed on the table. The entire skin surface, the mouth (lips, gums, cheek and pharynx), the breasts, the genitalia and the rectum are thoroughly examined. The rectal examination includes inspection and digital examination, with a proctoscopic study when this is indicated. The breasts are examined in both the erect and recumbent postures, with transillumination of any tumors. In women speculum and digital examinations of the pelvis are employed. In order to prevent undue haste, no physician is permitted to examine more than ten applicants in a two hour period.

TABLE 2.—*Schedule of Cancer Centers*

1. New Hanover County Cancer Center
James Walker Memorial Hospital
Wilmington, N. C.
Tuesday of each week—Registration: 11:15 a. m. to 12:30 p. m.
Detection Clinic: 12.00 to 2.00 p. m.
Diagnostic Clinic: 2:30 to 4:30 p. m.

2. Buncombe County Cancer Center
Memorial Mission Hospital
Asheville, N. C.
Tuesday of each week—Registration: 9:15 to 10:30 a. m.
Detection Clinic: 10:30 a. m. to 12:30 p. m.
Diagnostic Clinic: 1:30 to 3:30 p. m.

3. Forsyth County Cancer Center
City-County Health Center
Winston-Salem, N. C.
Wednesday of each week—Registration: 8:30 to 10:00 a. m.
Detection Clinic: 9:30 to 11:30 a. m.
Diagnostic Clinic: 12:00 to 2:00 p. m.

4. Durham-Orange Counties Cancer Center
Watts Hospital
Durham, N. C.
Thursday of each week—Registration: 8:15 to 9:30 a. m.
Detection Clinic: 9:00 to 11:00 a. m.
Diagnostic Clinic: 11:30 a. m. to 1:30 p. m.

5. Lenoir County Cancer Center
County Health Department
Kinston, N. C.
Thursday of each week—Registration: 11:15 a. m. to 12:30 p. m.
Detection Clinic: 12:00 to 2:00 p. m.
Diagnostic Clinic: 2:30 to 4:30 p. m.

6. Wilkes-Alleghany Counties Cancer Detection Center
Court House
Wilkesboro, N. C.
Tuesday of each week—Registration: 9:15 to 10:30 a. m.
Detection Clinic: 10:00 a. m. to 12:00 p. m.

7. Guilford County Cancer Center
Health Department
Greensboro, N. C. (opened July 15, 1949)
Friday of each week—Detection Clinic: 9:00 to 11:00 a. m.
Diagnostic Clinic: 11:30 a. m. to 1:30 p. m.

8. Jackson-Swain Counties Cancer Center
Harris Mission Hospital
Sylva, N. C. (opened Aug. 19, 1949)
Friday of each week—9:00 to 11:00 a. m.

All examinees are given pertinent instructions on printed yellow cards (table 3). Any patient with a potentially malignant lesion (breast tumor, chronic cervicitis) is referred to the Diagnostic-Management Center, which convenes in the same offices one half to one hour after completion of the detection examinations. Approximately 30 per cent of patients examined in the Detection Centers are referred to the diagnostic staff. All detection examinees with nonmalignant lesions are referred by letter to their personal physicians.

Diagnostic Management Center.—The staffs of the Diagnostic-Management Centers see only patients referred from the Detection Center with potentially malignant lesions, or patients of any age who have one of the seven danger signals and who are referred by a physician.

In the Diagnostic-Management Center examinees are assigned to the various members of the staff for study and presentation to the entire group. After consultation the director summarizes the diagnosis and recommendations. If special examinations or studies are required, the conclusion may be delayed for a week or longer. All special examinations such as laboratory tests and roentgenograms must be approved by the local director.

Biopsies are made of all superficial lesions when, in the opinion of the staff, they are indicated and when the biopsy does not result in total extirpation of the lesion. Patients who require dilatation and curettage for biopsy, or biopsy of a breast tumor, are referred to their personal physicians or to a hospital service if they are indigent. The results of biopsies are followed up by the Cancer Center clerks, so that the pathologic records may be included on the patient's report.

TABLE 3.—*Pertinent Instructions to Examinees*

(Face)

NORTH CAROLINA STATE BOARD OF HEALTH
INFORMATION FOR DETECTION CENTER PATIENTS

You have been given a limited examination at only five points where cancer occurs, but where it is most frequently detectable and curable.

This detection does not eliminate the necessity of a complete annual examination by your physician.

Have your physician make a complete physical examination every year.

Have a cancer detection examination every year.

(Reverse)

If any of the seven danger signals listed below develop tomorrow, next month, or at any time in the future, report *at once* to your physician:

An unexplained lump or thickening, especially in the breast
Any irregular or unexplained bleeding
A sore that does not heal, particularly about the mouth, tongue, or lips
Noticeable change in the color or size of a mole or wart
Loss of appetite or continued unexplained indigestion
Any persistent change in bowel habit
Any persistent hoarseness or unexplained cough

The director reviews all charts of detection and diagnostic examinees, referring those with either benign or malignant diseases to their personal physicians for treatment. Patients who have had a biopsy made are always returned to their personal physicians for follow-up on healing. If an examinee does not have a regular physician, he is requested to choose one from a list of the membership of the county medical society. It is a policy of the Centers for staff members not to accept examinees as private patients except in special circumstances or on the request of the director.

The director has at his disposal form letters which simplify the task of writing to a large number of physicians. These letters carry the diagnosis, physical and laboratory data and recommendations for management.

Records and Follow-Up.—Special record forms have been prepared for the streamlined Detection Center and the Diagnostic-Management Center. A separate form is used for proved cases of cancer. A carbon copy of each examinee's detection, diagnostic or malignancy chart is forwarded to the Division of Cancer Control of the state board of health.

Each patient with a malignant lesion and his private physician are requested to cooperate in the continued follow-up which is so important in the adequate management of cancer. Private patients, however, do not receive visits from public health nurses unless such visits are approved by the physician. All cases in which there is inconclusive evidence of malignant growth, as well as potential cases of cancer (for example, breast tumors) are followed up to establish the diagnosis and institute preventive measures.

The local county-city health officer, together with his staff, and especially his public health nurses, collaborates and assists in the all-important follow-up of potential and proved cases of cancer.

Rotation of Staff Members.—Rotation of staff members is important in order to permit the participation of a greater number of physicians, but too frequent rotation impairs efficiency. It requires some time for detection center examiners to become familiar with the routine; therefore, changes should not be made until after three months' service, and then only one member should be changed per month. On the Diagnostic-Management staff rotation should be even less frequent. The longer the Diagnostic-Management staff works together as a group, the better service it renders the clinic and the examinee. It is therefore our policy not to rotate diagnostic staff members until they have served six months, and then to change only one member per month.

OPERATING COSTS

All furniture, equipment, instruments, supplies, janitor service and salaries are paid for by the state board of health. Physicians are compensated as follows: director, $50 per month (major center); Diagnostic-Management staff member, $5 per session, and detection examiners, $2 per examinee. The senior stenographer-clerk is paid a salary commensurate with her ability and with the salary scale in that community. The graduate nurse is paid on an hourly basis. Roentgenograms are paid for on a cost basis according to an adopted fee schedule. Biopsies are paid for on a cost basis, at $3 per biopsy. The roentgenologist and pathologist are not paid professional fees for their services, since they are on the Diagnostic-Management staff and receive the same compensation as the other staff members. A schedule of fees for laboratory and roentgen examinations has been established on a cost basis in consultation with hospital administrators and radiologists.

PROFESSIONAL APPROVAL OF PROGRAM

It is estimated that approximately 80 per cent of the physicians in the state approve the program. Some physicians are neutral; others are willing to be convinced. The great majority of the members of the medical profession believe that the public is entitled to mass screening for cancer, accurate diagnosis and sound recommendations as to adequate management. Many believe that the program will be of definite benefit to the public and the profession in several ways:

1. It will lower cancer morbidity and mortality.
2. It will improve public relations.

3. It will act as a barrier against socialized medicine, by rendering more and better medical service to the public.

4. It will serve as postgraduate education for physicians in the study of oncology.

5. It will provide a means of caring for indigent patients with cancer through public funds, so that they will no longer be a burden to the private physician.

6. By uncovering more cases of cancer in the early stages it will reduce the number of advanced and often hopeless cases which require prolonged nursing care.

7. It will improve, through association and harmonious service, the relationship among certain medical groups.

The 15 per cent of physicians who object to the program do so on the premise that it is a stepping stone to socialized medicine. They believe that no citizen who is financially able to pay should be examined free. It is our experience that many examinees who have already consulted their physician and paid him for his services will go to the center for the opinion of the diagnostic staff. It is believed that this group of citizens will often compensate for their free service by liberal donations to medical projects, which will ultimately relieve private practitioners of the care of many indigent patients. These financially sound citizens will pay numerous visits to private practitioners with requests for repeated thorough medical examinations on a full fee basis. A large number of patients with previously unrecognized disease will be referred to private physicians for management. Our records show that over 60 per cent of examinees in the Detection Centers were found to have one or more benign lesions (table 4). In every such instance the patient was referred to his private physician for treatment.

When the ideal objective of making every physician's office a cancer detection center has materialized, the purpose of this program will have been accomplished and need for its continued operation will no longer exist.

GOALS FOR THE PRESENT AND FUTURE

The goal of the present program is to establish twenty centers throughout the state—ten major Centers, consisting of Detection and Diagnostic-Management Centers, and ten Detection Centers in smaller communities, so that no citizen will be required to travel more than 50 miles for examination. One hundred physicians, each working two hours a week in a Detection Center, examining 10 applicants per session for fifty weeks a year, would serve 50,000 examinees annually.

The North Carolina program is unique in that it offers mass screening of the largest possible number of citizens in the cancer age. It is directed by the state board of health, conducted by the local county medical societies with the assistance of the state cancer society and available to all the citizens of the state. The Hillsdale plan and the experiment conducted in Delaware by the American Cancer Society are both excellent for detection of malignant lesions in women, but we believe that men should be examined also. Our original survey (table 4) showed that 16.36 per cent of the total number of examinees were men and that 35.3 per cent of the total number with cancers were men.

The value of our program should be further enhanced in the immediate future by the addition of cytologic studies and gastric photofluorography. Beginning July 1, 1949 treatment was offered to a limited number of patients whom the welfare department certifies as indigent. A more remote, but extremely important, goal is the establishment of nursing homes for the care of patients with advanced cases of cancer. There is reason to hope that, after the Detection and Diagnostic-Management Centers have been in operation for some time, the number of such cases will be greatly reduced.

Table 4.—*Total Observations: Six Cancer Centers Operating a Total of 209 Sessions*

(New Hanover 62; Buncombe 52; Forsyth 47; Durham-Orange 24; Lenoir 18; Wilkes-Alleghany 6) April 27, 1948—June 30, 1949

	A.—Patients Examined			B.—Patients with Cancer		
Race	Men	Women	Total	Men	Women	Total
Aryan	916	4,634	5,550	87	143	230
Negro	78	482	560	8	31	39
Jewish	10	25	35	0	0	0
Race unknown	10	37	47	0	0	0
Totals	1,014	5,178	6,192	95	174	269

C.—Total Tumors (Malignant and Benign) in 6,192 Patients

	Cancers (Including Arrested)				
Site	Active	Arrested	Total	Inconclusive Cancer	Benign Tumors
Bartholin's gland	0	0	0	0	13
Bladder	1	0	1	0	0
Breast	38	5	43	21	95
Cervix	46	4	50	59	0
Colon	2	0	2	9	0
Hemangioma	0	0	0	0	38
Kidney	2	0	2	1	2
Lipoma	0	0	0	0	79
Liver	3	0	3	1	0
Lung	1	0	1	1	0
Lymph nodes	4	0	4	4	0
Mouth	13	1	14	10	51
Ovary	2	0	2	3	59
Penis	3	0	3	0	0
Prostate	6	0	6	2	10
Rectum	1	2	3	4	1
Skin	118	10	128	63	162
Thyroid	0	1	1	2	27
Uterus	3	5	8	16	232*
Vulva	2	0	2	0	0
Stomach	0	0	0	18	0
Other	5	0	5	13	17
Totals	250	28	278	227	786

* Includes cervix.

D.—Special Studies

	Recommended	Done	Not Done
Biopsies	772	484	288
Roentgenograms	164	66	98

E.—Nonmalignant Findings—Total

Site		Diagnosis	
Gastrointestinal *	366	Tumors	786
Female genitalia †	2,063	Nevi	612
Veins and circulatory organs ‡	741	Diabetes	5
Male genitalia §	162	Tuberculosis	2
Breast	422	Deficiency disease	30
Respiratory tract	120	Congenital malformation	19
Buccal cavity	173	Sebaceous cysts	103
Skin	576	Hernias	47
Urinary system	119	Rheumatism and arthritis	24
Thyroid	45	Postcoital bleeding	9
Liver and gallbladder	35	Miscellaneous	94
Totals	4,822	Totals	1,731

Total benign findings: 6,553

* Includes peptic ulcers in 19 cases, duodenal ulcers in 11 and rectal fissures in 85.
† Includes the cervix in 1,316 cases.
‡ Includes hemorrhoids in 697 cases.
§ Includes prostatic hypertrophy in 141 cases.

F.—Disposition of Detection Examinees

Referred to personal physicians	2,317
Referred to diagnostic-management staff and then to personal physician	1,937
Not referred	1,938

Clinical Notes, Suggestions and New Instruments

PROLONGED TREATMENT OF RHEUMATOID ARTHRITIS WITH PITUITARY ADRENOCORTICOTROPIC HORMONE (ACTH)

DAVID E. MARKSON, M.D.
Chicago

Prolonged treatment of rheumatoid arthritis with pituitary adrenocorticotropic hormone (ACTH) has been given in 2 cases since the program for the use of this substance was initiated.

REPORT OF CASES

CASE 1.—*History and Initial Observations.*—The principal complaints of W. E. S. at the time of his admission to Wesley Memorial Hospital were referable to his left knee and his right ankle. The right ankle was swollen and tender to pressure, with no lateral motion possible; however, flexion and extension of the joint was slightly limited about 10 degrees in both directions. The left knee was decidedly swollen, tender and painful; it could be flexed to a right angle, and extension to 165 degrees was possible with great pain for the patient. In addition, he had fleeting acute attacks of redness, swelling and severe pain in the second interphalangeal joints of the fingers and in the wrists, in the elbows and at times in the shoulders. The fingers showed fusiform swelling typical of an old rheumatoid arthritis. The man walked with a pronounced limp, supported himself with a cane, could not mount a stairway and could not enter an automobile without help. In the autumn of 1948 he was vacationing in his island estate in Canada, and the affected joints became so painful that he had to be carried to his boat.

Diagnostic Studies.—The admission diagnosis was an old rheumatoid arthritis in an acute phase with an associated mild thromboangiitis obliterans (Buerger's disease). This latter diagnosis was supported by a history of intermittent claudication for the past fifteen years, the absence of the peripheral pulsations in the dorsalis pedis and anterior tibial arteries in both legs, and low oscillometric and decreased skin temperature readings, as well as the blanching phenomenon on elevation of the legs and purple discoloration on assumption of the dependent position. There was no significant change in skin temperature after posterior tibial nerve block had been performed. The leg vessels were not visualized roentgenologically.

Roentgen Examination: Roentgenologic studies revealed typical signs of rheumatoid arthritis in the affected joints, the hands and the knees. There was demineralization of the bones in the right ankle joint. The bones had a "ground glass" appearance. These observations are consistent with the interpretation of a specific arthritis. There were minimal hypertrophic changes consistent with the patient's age in the acromioclavicular articulation and in the knees. Examination of the chest revealed a triangular area of infiltration in the right middle lobe which was interpreted as encapsulated fluid.

Laboratory Results: Laboratory data were as follows: The red blood cell count was 4,860,000, the hemoglobin level 14.5 Gm., and the white blood cell count 10,900 with a differential count of neutrophils 71 per cent, lymphocytes 25 per cent, monocytes 1 per cent and eosinophils 3 per cent. Reaction of the blood to the Kahn test was negative. The sedimentation rate (Wintrobe) was 32, and the hematocrit reading 46. The determination for uric acid was 3.72 mg., total protein 6.02 mg., albumin 3.85 mg., globulin 2.17 mg., and blood sugar 85 mg., per hundred cubic centimeters. The dextrose tolerance curve was normal, the reaction to the complement fixation test for gonorrhea was negative and the urine was normal. The throat culture and sputum culture were sterile. The electrocardiogram showed no diagnostic deformities.

Treatment.—Initially the patient was placed in traction in an attempt to correct the deformity in the left knee. Later, various physical measures were tried, whirlpool baths, infra-red rays and massage to the badly wasted left quadriceps. Codeine, ¼ grain (15 mg.), three times a day was the only analgesic drug used. It kept the patient comfortable for the most part; however, with increasing humidity, he at times would use as many as six tablets daily.

On May 21, 1948 the program for the use of pituitary adrenocorticotropic hormone[1] was initiated. All medication of the patient except codeine for pain and suppositories for his hemorrhoids was discontinued. He was given a quantitatively controlled dietary intake for six days during the control period. All the fluid intake and urinary output were carefully measured. The urine (twenty-four hour specimen) was sent to the Smith-Freeman laboratory for analysis. His blood was drawn at intervals of three days for the electrolyte studies. There was a daily test for sugar, and biweekly sedimentation rate and albumin-globulin ratios were determined as well as daily pipet eosinophil counts by the Randolph method.[2] The initial dosage of pituitary adrenocorticotropic hormone was 25 mg. intramuscularly every six hours, or a total of 100 mg. in twenty-four hours. This was continued until June 5, 1949, at which time the dosage was changed to 50 mg. daily in three eight hour periods. On June 30 the dosage was changed to 15 mg. at twelve hour intervals, or a total of 30 mg. daily. This dosage has continued as the maintenance dosage of the patient until the time of writing.

Results of Treatment.—The effect of treatment became dramatically noticeable seventy-two hours after the initiation of treatment. The swelling in the left knee had entirely disappeared, and calibration of the knee showed a reduction of 1½ inches (3.8 cm.). The intense pain to pressure over the internal lateral ligaments had entirely vanished, and the patient could stand severe pounding over this formerly exceedingly sensitive area. Motion in the knee had increased 40 per cent. The swelling in the right ankle had entirely disappeared, but the limitation of motion had not changed remarkably. The palindromic bouts of redness, swelling and pain in the other joints had also disappeared. The whole attitude of the patient had changed from that of an irritable, fiery tempered person to one of pleasantness which the nursing staff noticed at once. His appetite increased immediately, and with it there was a return of muscle strength. He could now lift a telephone book with one hand, a feat which formerly required the use of both. His clinical course until discharge has been steadily improved, so that he now walks with only a slight limp due to fixation of his right ankle. His posture is erect and he does not use any support; he can walk up and down stairs in a normal fashion and is now vacationing and indulging in daily fishing.

Evaluation of Results.—One must still be cautious about the acceptance of this remarkable improvement as a cure of arthritis and be guarded about the possible dangers which the continued use of pituitary adrenocorticotropic hormone may present in the future. Our own attitude is one of caution and vigilant watch for any untoward symptom that may occur. This is accomplished by frequent reexaminations. From a purely experimental point of view the results are gratifying, but to accept this as a cure of the arthritis of the patient would be unwarranted optimism. Only the future will bring the final answer to this question.

CASE 2.—*History and Initial Observations.*—J. S. was admitted to Wesley Memorial Hospital June 6, 1949 for a check-up of his arthritis, which had started dramatically and suddenly in 1938 when he was hospitalized for pleurisy. The joints involved were: the left ankle, where the process began with redness, swelling and pain; the hands; the wrists; both shoulders, and later the right ankle. In spite of treatment in many hospitals the man became so crippled that he had to resort to crutches in

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The Armour Laboratories, through Dr. John R. Mote, furnished the pituitary adrenocorticotropic hormone (ACTH) used in this study.

From the Departments of Medicine and Experimental Medicine, Northwestern University Medical School and Wesley Memorial Hospital.

Associate Professor of Medicine, Northwestern University Medical School. Work done in the Department of Medicine, Northwestern University Medical School and Wesley Memorial Hospital.

[1] Hench, P. S.: The Potential Reversibility of Rheumatoid Arthritis, Proc. Staff Meet., Mayo Clin. **24:** 167, 1949.

[2] Randolph, T. G.: Blood Studies in Allergy: I. The Direct Counting Chamber Determination of Eosinophils by Propylene Glycol Aqueous Stains, J. Allergy **15:** 89, 1944; Differentiation and Enumeration of Eosinophils in the Counting Chamber with a Glycol Stain; a Valuable Technique in Appraising ACTH Dosage, J. Lab. & Clin. Med., to be published.

1945. His condition was unchanged at the time of his admission to the hospital.

He stated that he had been taking from four to fifteen 5 grain (0.32 Gm.) tablets of acetylsalicylic acid daily in order to partially relieve the intense pains (or as he explained, the "feverish pains") in his joints. On awakening in the morning after a painfully restless night he took from two to four acetylsalicylic acid tablets before he could move his shoulders, elbows and knees. With great effort, by leaning on his painful elbows, he would prop himself up in bed and finally reach a sitting position, from which he was able to reach his crutches. Bearing his full weight on the crutches, he would throw his stiff knees forward. He could not hold a telephone receiver with his fingers.

Physical Examination.—Physical examination revealed that the temperature was 98.6 F., the pulse rate 100, the respiratory rate 20, the blood pressure 144 systolic and 80 diastolic, and the weight 189 pounds (89.8 Kg.). The patient had a barrel-shaped chest. Scattered expiratory musical rales were diffuse anteriorly and posteriorly. The heart was considered normal for the patient's age. The essential observations were related to the advanced rheumatoid arthritis of the patient. His fingers showed typical fusiform swelling of all fingers. The wrists displayed only slight limitation of motion. The right elbow was decidedly swollen and tender, with extension possible to about 120 degrees. The shoulders were painful, and motion was severely limited in abduction. The patient had difficulty in rotating his head from side to side, so that he turned his body to avoid movement of the cervical vertebrae. Both knees were swollen and painful, fixed in partial flexion.

Roentgenologic Data.—Roentgen examination revealed a far-advanced rheumatoid arthritis of the hands, both elbows and both shoulders. The cervical vertebrae showed marginal lipping. The left hip disclosed minimal hypertrophic arthritis. The knees manifested decided narrowing of the joint spaces with extensive osteoporosis.

Laboratory Results.—Laboratory data were as follows: The red blood cell count was 3,900,000, the hemoglobin level 12 Gm., and the white blood cell count 9,150 with neutrophils 57 per cent and lymphocytes 43 per cent. The hematocrit reading was 37, and the sedimentation rate (Wintrobe) was 34. Reaction of the blood to the Kahn test was negative. The level of nonprotein nitrogen was 28.5 mg., total proteins 6.55 mg., albumin 3.44 mg., globulin 3.11 mg., sugar 80.9 mg., calcium 4.9 mg. and phosphorus 4.16 mg., per hundred cubic centimeters. Urinalysis revealed normal values. The vital capacity was 2,900 cc. The electrocardiogram showed no specific diagnostic deformities.

Treatment.—On June 20, after a suitable six day control period, he was given pituitary adrenocorticotropic hormone, 20 mg. every six hours, or a total twenty-four hour dosage of 80 mg. This was continued until July 2, 1949, at which time the dosage was changed to 20 mg. every eight hours, or 60 mg. for a twenty-four hour period. On July 26 the dosage was changed to 45 mg. daily, with three doses of 15 mg. each at eight hour intervals. The patient has been maintained to the time of writing on two 20 mg. doses at twelve hour intervals.

Results of Treatment.—The first remarkable indication of progress in this patient began June 20, 1949, when he first walked without the aid of crutches; he was able to move his shoulder with ease, to reach the back of his neck and to clasp his hands behind his back. His attitude had changed, and the typical euphoria, increased appetite and increased muscular strength was now apparent. His sedimentation rate had become normal, and his blood cell count returned to normal. The following remarks were made by a friend who had known him for twenty-five years. "He seems ten years younger. His eyes reflect the man he had been before he was on crutches. I seem to get the impression that his hair is less gray. His attitude has changed to that which existed twenty-five years ago, optimistic, happy and carefree. He seems to be a man with new hope, with a keen anticipation of the years ahead.

"On the physical side, his ability to get out of bed with ease, to walk without crutches, to grab the telephone with his whole hand, to turn his head from side to side without moving his body and to look at the ceiling without pain is indeed exhilarating." J. S. returned to his work on a full time schedule after his discharge from the hospital.

COMMENT

I have obviously avoided the detailed studies which have been performed by Dr. Smith-Freeman and many other details of the studies which will be published later. W. E. S. (case 1) was treated for approximately four months, and J. S. (case 2) was treated for approximately three months. W. E. S. was discharged from Wesley Memorial Hospital July 21 and J. S. was discharged Aug. 1, 1949. These patients have been checked at weekly intervals. Serious reactions or symptoms from treatment have not been noted. It would be presumptuous at this point in the investigation of its effect to consider pituitary adrenocorticotropic hormone as a cure for arthritis; however, in my opinion no other agent could have accomplished so much in so short a time. Only the future will give the final answer to the possible dangers from further prolonged treatment with this endocrine substance. It has not been considered that these patients are cured of arthritis, as they both have continued their maintenance dosage of the compound. In both of the patients, the return to the approximation of their original status was noted when administration of the medicament was discontinued for three days. It is believed that, as in the treatment of diabetes, the maintenance dosage must be continued indefinitely.

CONCLUSIONS

1. It is believed that pituitary adrenocorticotropic hormone (ACTH) has opened a new approach to the treatment of rheumatoid arthritis, and that the endocrine substance, like insulin in the treatment of diabetes, may keep these patients comfortable and restore them from invalidism to productive, useful lives in their former occupations.

2. At the time of writing it is impossible to evaluate the effect of prolonged treatment; however, in the case of W. E. S., who has been treated continuously since May 5, no serious reactions and no untoward symptoms have occurred. Similarly, J. S., who has been treated since June 9, has had no serious reactions.

TUBERCULOUS ABSCESS SUCCESSFULLY TREATED BY ASPIRATION AND INJECTION OF STREPTOMYCIN

AMOS R. KOONTZ, M.D.
Baltimore

A tuberculous abscess arising from a tuberculous costal cartilage was successfully treated by aspiration of the contents of the abscess cavity and immediate injection of streptomycin into the cavity. As far as I know, no other such case has been reported in the medical literature.

REPORT OF CASE

History and Examination.—S. H., an unmarried white man aged 27, came to me April 9, 1940, complaining of a tumor of his left chest wall which had been present for a year and which was gradually increasing in size. On examination the tumor was about 1¾ inches (4.5 cm.) in diameter lying in the fourth interspace just to the left of the costal margin. The tumor was firm and felt like a fibroma with a small amount of fatty tissue in it. Roentgen examinations revealed a cystic tumor which was interpreted as probably having arisen from the costal cartilage. The patient's temperature was normal.

Operations and Course.—On April 19, 1940, the patient underwent operative intervention at the Church Home and Infirmary under anesthesia with tribromoethanol solution (avertin® with amylene hydrate) and cyclopropane. The cystic tumor contained thick white grumose material, and it had apparently arisen from the space between the end of the left fourth rib and its costal cartilage. A smear was stained for tubercle bacilli, but none was found. The cavity was swabbed out with liquefied phenol followed by alcohol, and the wound was closed, a small gutta-percha drain being left in. Pathologic examination of part of the abscess wall showed tuberculosis.

On April 25, 1940, the patient's chest was examined roentgenologically and found to be entirely clear. The sinus had healed by about the middle of April 1941 but reopened in July of that year and failed to heal.

On Jan. 17, 1942 a second operation was performed at the Union Memorial Hospital with the use of procaine anesthesia. The sinus tract was injected with methylene blue and the entire tract excised. The wound was left wide open and packed. On Feb. 28, 1942 the wound had healed.

Development and Treatment of Tuberculoma.—I next saw the patient on Jan. 21, 1947. He stated that sometime during 1944 the wound had opened again and had drained for several months and then healed. It had recently opened again and drained for two days. The real occasion for the present visit, however, was that a swelling had developed, about six months previously, just above the old sinus tract. Examination revealed a definite swelling the size of a hickory nut at the junction of the left third rib and costal cartilage. The swelling was rather firm and had a cartilaginous feel without fluctuation or reddening. Roentgen examination again showed that the lungs were clear but gave no information as to the nature of the mass.

Laboratory studies disclosed a mild secondary anemia. There was a positive tuberculin reaction from 0.001 mg. of tuberculin but none from 0.0001 mg. A diagnosis of tuberculoma was made.

On July 1, 1947 an attempt was made to aspirate the tuberculoma, using a 16 gage needle, but with negative results. One gram of streptomycin dissolved in 2 cc. of isotonic sodium chloride solution was injected into the center of the tuberculoma. On August 2, 3 cc. of slightly yellowish white pus was withdrawn and another gram of streptomycin dissolved in 2 cc. of isotonic sodium chloride solution was injected into the cavity. On August 16, 0.9 cc. of the same type of pus was withdrawn and another gram of streptomycin injected. On September 6 an attempt at aspiration resulted in a dry tap, and at no subsequent time could any pus be aspirated. One gram of streptomycin was injected on this date and also on September 20. Following this the tuberculoma shriveled up and gradually disappeared. No evidence of it can be discerned at present, except a small indurated area about 2 mm. in diameter.

The patient's temperature had remained normal throughout the entire period of observation.

Streptomycin Infiltration; Result.—In the meantime the old sinus tract leading down to the fourth costal cartilage had reopened, and a probe could be inserted for approximately 1 inch (2.54 cm.). It was now decided to treat this tract by infiltrating streptomycin around it. Consequently 1 gm. of streptomycin was dissolved either in isotonic sodium chloride solution or a 1 per cent solution of procaine, in amounts varying from 2 to 10 cc., and was injected, infiltrating the tissues all around the sinus tract, on each of the following dates: Oct. 4, 18 and 25; Nov. 1, 15 and 22, 1947. The condition improved, but the sinus had not completely healed. It was decided to discontinue streptomycin therapy for awhile to see whether the sinus would heal without the drug. Healing did not occur, however, and on March 31, 1948 injections of streptomycin were resumed and were continued on the following dates: April 3, 7, 10, 15 and 22; May 1, 8, 15 and 22; June 2, 9, 16, 23 and 28, and July 2.

The sinus tract healed immediately after this course of injections and has remained healed since, with a firm and healthy looking scar.

COMMENT

Brock[1] has reported excellent results in draining tuberculous sinuses by giving streptomycin intramuscularly every four hours over long periods of time (ninety to one hundred and fifty days). It may be that certain of these sinuses would yield to treatment in shorter periods of time with less streptomycin if the streptomycin were injected locally around the sinus tracts, as was done in the case reported herein.

Results also would seem to indicate the potentialities of streptomycin in the treatment of tuberculomas by local injection. It is possible that this method might prove successful in the treatment of tuberculous lymphatic nodes of the neck.

SUMMARY

A tuberculoma and a draining tuberculous sinus in the same patient were apparently cured by the local injection of streptomycin. Streptomycin was not given intramuscularly or in any manner other than locally.

1014 St. Paul St. (2).

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[1] Brock, B. L.: Streptomycin in the Treatment of Draining Tuberculous Sinuses, J. A. M. A. **135**:147-149 (Sept. 20) 1947.

SEROUS ARTHRITIS OF THE KNEE JOINT

Report of a Case Caused by Salmonella Typhosa and Salmonella Montevideo in a Child

H. SAMSON GORDON, M.D.
SAMUEL J. HOFFMAN, M.D.
ALLEN SCHULTZ, M.D.
and
FLORENCE LOMBERG, M.S.
Chicago

Salmonellosis in man usually takes one of the following forms: Salmonella fever, Salmonella septicemia, gastroenteritis, localized infections (such as meningitis or arthritis) or the asymptomatic carrier form.

Although intestinal infections do not offer many special diagnostic problems, awareness that salmonellosis may involve body sites other than the intestinal tract is necessary for more frequent recognition and diagnosis of extraintestinal infections due to Salmonella.

Bone involvements caused by Salmonella organisms are comparatively rare, and Salmonella infections of joints are even more so. Although salmonellosis has been known to exist for many years, Guerra and associates[1] found only 15 proved cases of infections of bone and joints in a review of articles on the subject up to 1940. More recently the following reports have been made available.

One case reported by Vinke and Dowling[2] involved the knee joint. Edwards and associates[3] reported, in a series of studies of 2,949 strains of Salmonella in man, only 5 instances in which these organisms were recovered from joints. Seligman and others,[4] in reporting 1,916 cases of Salmonella infections, noted a variety of sites from which these bacteria were recovered but did not find a single instance of Salmonella involving the joints. Similarly, Hormaeche and co-workers,[5] in a report on 498 children with Salmonella infections, did not find a case of arthritis.

Salmonella infection involving a joint is described in the following case report.

REPORT OF CASE

S. J., a 2 year old Negro girl, was admitted to the Cook County Hospital Oct. 16, 1948. Her mother said that she had been well until six days previously, when she had pain in the left leg and in the abdomen. The mother noted that the left knee was swollen at this time. The swelling became progressively larger and was hot and tender. There had also been an episode of pain in the left shoulder one day before the child was hospitalized.

On physical examination the child appeared well nourished but acutely ill. The temperature was 103 F. rectally, the pulse rate 120 and the respiratory rate 26 per minute. The neck showed shotty adenopathy.

The left leg was held in adduction and internal rotation. The left knee was swollen, tender and hot; it was extremely painful even to touch. Since the clinical diagnosis was acute suppurative arthritis, sulfadiazine and penicillin were prescribed

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From the Children's Division and the Hektoen Institute for Medical Research of the Cook County Hospital.

[1] Guerra, A. R.; Peluffo, E., and Aleppo, P. L.: Localizaciones extraintestinales, en el niño, de las bacterias productantes de enteritis infantiles: Un estudio sobre la etiología infectiosa de las diarréas infantiles, Montevidéo, J. García Morales, 1940.

[2] Vinke, T. H., and Dowling, H. G.: Salmonella Infection Involving Knee Joint: Report of a Case, J. Bone & Joint Surg. **29**: 232-233, 1947.

[3] Edwards, P. R.; Bruner, D. W., and Moran, A. B.: Further Studies on the Occurrence and Distribution of Salmonella Types in the United States, J. Infect. Dis., **23**: 220-221, 1948.

[4] Seligman, E.; Saphra, I., and Wassermann, M.: Salmonella Infections in the United States, J. Immunol. **54**: 69-87, 1946.

[5] Hormaeche, E.; Surraco, N. L.; Peluffo, C. E., and Aleppo, P. L.: Causes of Infantile Summer Diarrhea, Am. J. Dis. Child. **68**: 539-551 (Nov.) 1943.

and orthopedic consultation was secured. On October 28, two days after the patient entered the hospital, the left knee joint was aspirated, and 50 cc. of serosanguineous fluid was obtained. The knee was immobilized with a posterior splint from the toes to above the knee joint.

When the material from the knee joint was found to contain Salmonella typhosa and Salmonella montevideo, streptomycin therapy (300,000 units intramuscularly every three hours) was instituted for seven days. Splinting was maintained. The swelling began to subside and gradually became less tender.

On November 19, while the patient was still receiving streptomycin therapy, the knee joint was again aspirated and 5 cc. of a serosanguineous fluid was obtained, a culture of which was sterile. The leg was then immobilized with a circular cast. Subsequent recovery of the child was uneventful.

The child was dismissed from the hospital, and neither disability nor recurrence of the infection has been noted to the time of this writing.

The four other members of the family were contacted. Although stool specimens could not be obtained, agglutination tests were made. The serums of three members of the family showed a positive reaction to the agglutination tests with polyvalent Salmonella antigen. The reaction of the fourth serum was negative.

Laboratory Data.—Reactions to the Mantoux test with tuberculin in a dilution of 1:1,000 and to serologic tests for syphilis were negative. As stated, the smear and culture of the material aspirated from the left knee joint failed to reveal growth of Mycobacterium tuberculosis but contained Salmonella montevideo and Salmonella typhosa.

The red blood cell count was 3,800,000; the hemoglobin level was 7.5 Gm., and the color index was 0.67. The white blood cell count was 14,350. The differential cell count showed the following percentage distribution: basophils 1; eosinophils 2; segmented polymorphonuclear neutrophils 52; lymphocytes 19, and monocytes 22.

Roentgenologic studies on October 8 revealed swelling of the soft tissue and possible fluid in the area of the suprapatellar bursa.

COMMENT

Those who have seen typhoid in young persons know that this disease does not adhere to the classic description of Salmonella fever. This case is an example of how protean salmonellosis may be.

Bacteriologists have recently placed the typhoid bacillus in the genus Salmonella. The technical aspects behind such conclusions are not within the scope of this paper. Clinically the disease caused by the typhoid bacillus is known as typhoid, but the bacteriologists commonly speak of this condition as Salmonella fever.

From the course of the disease in this case, one may conclude that the administration of sulfonamide drugs, penicillin and streptomycin had little, if any, effect. More active antibiotics, such as chloramphenicol (chloromycetin®) and aureomycin, have become available since this patient was seen.

The presence of multiple infections due to Salmonella in man is generally known.[6] The scarcity of reports of such infections is probably due to the fact that only a few colonies of organisms isolated from patients with such infections have been studied. The aid of Salmonella typing centers should be utilized, since they alone have personnel particularly adept in identifying the Salmonella organisms. The common error of mistaking Salmonella organisms for typhoid bacilli can be eliminated with the help of these typing centers.

Skeletal infections caused by typhoid occur in about 1 per cent of those infected with this organism.[7] Arthritis is rare; the infection usually is of the osteomyelitic type which spreads from the bone marrow. A serous exudative process in salmonellosis is probably the result of the action of an endotoxin and is seldom observed.[8]

SUMMARY

Serous arthritis of the knee joint caused by Salmonella typhosa and Salmonella montevideo in a 2 year old child was healed by treatment with streptomycin.

Council on Physical Medicine and Rehabilitation

REPORT OF THE COUNCIL

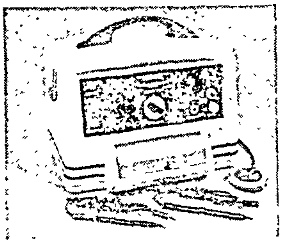
The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.

Howard A. Carter, *Secretary.*

RADIOSURG SCALPEL, MODEL R-1, ACCEPTABLE

Manufacturer: Electronic Surgical Equipment Co., Inc., Twenty-Third and Arch Streets, Philadelphia 3.

The Radiosurg Scalpel, Model R-1, is an electrotome or electric knife in which, according to the firm, an arrangement of three vacuum tubes is used to produce radio-frequency currents for cutting, coagulation, hemostasis, fulguration and sterilization. The circuits are housed in a white-enameled case measuring 33 by 58 by 51 cm. (13 by 23 by 20 inches). The apparatus weighs 15.4 Kg. (34 pounds); the shipping weight is 27 Kg. (60 pounds). The accessories include a combination line cord and foot switch, an indifferent (conductive) plate, two operating handles, two operating handle cords, eight electrodes of various sizes and shapes and one printed instruction sheet.



Radiosurg Scalpel, Model R-1

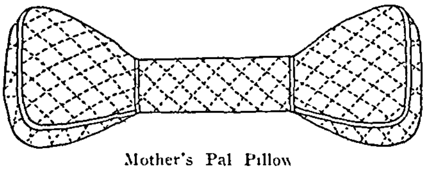
The instrument operates on 110-115 volt alternating current and draws approximately 280 watts from the line at a full load output of 40 watts. The output is described as a "fully rectified cutting current." The instrument is designed for minor surgery and is not intended for major surgery in the operating room.

The specimen submitted by the firm was thoroughly tested under conditions acceptable to the Council, and evidence of satisfactory construction and performance was obtained. The Council on Physical Medicine and Rehabilitation voted to include the Radiosurg Scalpel, Model R-1, in its list of accepted devices.

MOTHER'S PAL PILLOW ACCEPTABLE

Manufacturer: Heide Baby Products, 5031 North New England Avenue, Chicago 31.

The Mother's Pal Pillow is designed to support the abdomen of the pregnant woman during sleep. It is essentially a pair of pillows held in place on either side by tie strings in front.



Mother's Pal Pillow

The weight of the assembly is 0.9 Kg. (2 pounds), and the shipping weight is 1.8 Kg. (4 pounds).

The Council obtained convincing evidence that this arrangement provided comfort to pregnant women, aided them to obtain desirable rest and relaxation and caused no harm.

The Council on Physical Medicine and Rehabilitation voted to include the Mother's Pal Pillow in its list of accepted devices.

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[6] Bruner, D. W., and Joyce, B. J.: Salmonella Types Encountered by the Fifteenth Medical General Laboratory, Am. J. Hyg. **45**: 19-24, 1947. Hormaeche, Surraco, Peluffo and Aleppo.[5]

[7] Stuart, B. M., and Pullen, R. L.: Typhoid: Clinical Analysis of Three Hundred and Sixty Cases, Arch. Int. Med. **78**: 629-661 (Dec.) 1946.

[8] Hormaeche, E.: Estudios sobre la etiología de las diarréas infantiles: Xa Jornada Pediatrica Rioplatanese, Montevidéo, J. García Morales, 1940.

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SATURDAY, OCTOBER 15, 1949

INVESTIGATION OF MEDICAL ORGANIZATIONS

In the Organization Section of this issue of The Journal page 465 is a statement released to the press by the Board of Trustees of the American Medical Association. This statement is concerned with the investigation of medical organizations by the Anti-Trust Division of the United States Department of Justice. Included in those under investigation is the American Medical Association.

ROLE OF THE KIDNEY IN THE PATHOGENESIS OF HYPERTENSION

One of the difficulties involved in determining experimentally the exact role of the kidney in the pathogenesis of hypertension, according to Grollman,[1] has been the impossibility of ablating this organ without introducing the fatal effects of interfering with its normal excretory function. Grollman and his co-workers prolonged life and maintained their animals in good health for several days by feeding them an electrolyte-free diet and by the use of Kolf's "artificial kidney." The electrolyte-free diet was prepared either by dialysis of the animals' normal food or by feeding a mixture of casein with a low sodium content to which dextrose and lard were added. Animals maintained on such diets remained in much better health following bilateral nephrectomy and survived longer than those on a free diet. The intensity of many of the symptoms observed in the animal that had been subjected to nephrectomy, as well as in the human patient who died in uremia, is apparently due to the accumulation of ingested electrolytes, for the severity is generally mitigated if electrolytes are excluded from the diet. The survival period of the dog subjected to nephrectomy varies usually between two and seven days. When the animals were given a salt-free diet survival was extended to at least five days and usually longer. Maintenance of animals without renal function beyond this time required the application of Kolf's "artificial kidney" to remove the accumulated urea and other waste products from the body and to maintain normal water, electrolyte and acid-base equilibriums. The artificial kidney had to be applied on the fifth or sixth day following exclusion of renal excretory function and at intervals of three or four days thereafter. The femoral artery was ligated, and the blood, after passing through the "artificial kidney," returned to the femoral vein. A period of dialysis of two and one-half to three hours was usually required to lower the urea content of the blood from 470 to 600 to less than 100 mg. per hundred cubic centimeters. The effect of the following procedures on the mean blood pressure of the dog was determined: (1) bilateral nephrectomy, (2) bilateral ligation of both ureters, (3) ligation of one ureter, the other remaining intact, (4) implantation of one ureter into the small bowel with removal of the contralateral kidney and (5) implantation of one ureter into the abdominal vena cava with removal of the contralateral kidney.

Bilateral nephrectomy on 38 dogs showed a definite tendency for the blood pressure to rise. This rise was evident on the third day following nephrectomy and increased thereafter as long as the animal survived. The average mean blood pressure rises gradually over the preoperative level as survival is extended. Bilateral ureteral ligation not only stops the excretory activity of the kidney but also interferes with its blood supply because of pressure on the renal pelvis. There is congestion of the kidney, hydronephrosis and often perirenal hemorrhage. Nevertheless, certain activities of the kidney are apparently still preserved, such as its glycogenic function and presumably its capacity to maintain a normal blood presure after subsidence of the acute rise which follows this operation.

The authors reason that the rise in blood pressure of the dog that had undergone nephrectomy to hypertensive levels cannot have been due to the liberation of a renin or other pressor agents derived from the kidney, since renal tissue was absent in the animal. Nor can it be argued that the rise in pressure was due to any interference with normal hemodynamics by the use of the artificial kidney, since the rise in pressure was evident even before the animal was subjected to this manipulation and no rise occurred when uremic animals with renal tissue present were treated similarly.

Nephrectomy results in hypertension. The presence of intact renal tissue is essential for the maintenance of the normotensive state. These studies offer evidence for the view that the kidney normally, in addition to its excretory function, exerts a function which is concerned in the maintenance of normal blood pressure levels. Hypertension of renal origin according to this view is not due to the liberation of a pressor agent, but results from a failure of this activity of the kidney.

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[1] Grollman, A.; Muirhead, E. E., and Vanatta, J.: Role of the Kidney in Pathogenesis of Hypertension as Determined by a Study of the Effects of Bilateral Nephrectomy and Other Experimental Procedures on the Blood Pressure of the Dog, Am. J. Physiol., **157**: 21-30 (April) 1949.

ENVIRONMENTAL CANCER PATTERN

Knowledge of environmental carcinogens with which special groups of workers as well as the general population may have contact has been increasing rapidly. Diagnostic methods for establishing the presence and type of carcinogenic hazards in the human environment are still inadequate. Neither environmental carcinogenic agents nor the cancers produced by them display any characteristic properties that distinguish them from physically or chemically similar, noncarcinogenic agents or from cancers of unknown origin. Chief reliance has been placed in the past on statistical-epidemiologic methods and on the demonstration of excessive incidence rates of cancer in exposed population groups. Recent investigations on the various symptoms and manifestations observed in members of population groups exposed to potential environmental carcinogens indicate that valuable information as to the presence of environmental cancer hazards may be obtained through a correlation of the various abnormal reactions seen in individual members of such groups with the biologic qualities of carcinogens when acting in different doses, intensities, routes and periods.

Some of the symptoms occurring in persons exposed to environmental carcinogens are of precancerous nature, i. e., they represent proliferative responses of cancerous potentialities, while others, also elicited by the carcinogenic agent, are unrelated to the cancerization but always accompany it and thus are a part of the telltale footprints produced by the specific exposure. These precancerous reactions include atrophying, degenerative and necrotizing changes, such as anemia; leukopenia; atrophy of hematopoietic tissue seen after exposure to benzol and roentgen rays; atrophies, ulcers and melanoderma of the skin following exposure to tar, pitch, mineral oil, arsenicals and actinic energy, and telangiectases found in the skin exposed to roentgen rays and rays from radioactive substances and in the bladder mucosa after contact with aromatic amines. The precancerous stigmas are leukoplakia, hyperkeratosis, warts, papilloma, hyperleukocytosis, leukemoid reactions, fibrous periostitis and polyps appearing in the skin, mucous membranes and internal organs after exposure to the various environmental carcinogens. The different pericancerous and precancerous reactions form a diagnostically important environmental cancer pattern,[1] the component parts of which may occur among the various members of an occupational or environmental group exposed to an exogenous carcinogenic agent and may appear even in a single member of such a group during the various phases of carcinogenic exposure. The aplastic and hyperplastic responses to exogenous carcinogens illustrate strikingly the ambivalent properties which many of the recognized carcinogenic agents possess and which in part are utilized for therapeutic purposes. Arsenicals, benzol, roentgen rays, radioactive substances, estrogens, urethane and some of the newer nitrogen mustards display such diverse qualities. It should prove profitable to make use of them for diagnostic reasons in the discovery of environmental cancers.

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[1] Hueper, W. C.: Environmental and Occupational Cancer Hazards; Their Causes and Their Control, in Proceedings of the Greater New York Safety Council, New York, 1949.

THE THYMUS AND MYASTHENIA GRAVIS

In a review of the relation of the thymus to myasthenia gravis in 1943, McEachern[1] suggested that the thymus functions to inhibit muscular contraction. The thymus is largest in fetal and postnatal life, when uninhibited violent muscular contractions might be harmful to the growing organism. Less adaptive inhibition would be involved as the child grows and is able to exercise more satisfactorily coordinated voluntary control of muscles. Hence the automatic mechanism responsible for muscular inhibition in postnatal life might be expected gradually to diminish.

If a large thymus persists, the accumulating effect of its muscle-inhibiting factor might be responsible for the symptoms of myasthenia gravis. McEachern was unable to demonstrate that extracts from the thymus could reduce the neuromuscular response to a given stimulus. Constant and his associates[2] at the University of Texas Medical Branch, Galveston, using a special technic devised by Porter and Wharton,[3] recently demonstrated significant reduction in neuromuscular response on injection of saline extracts of normal thymus and of surgical and postmortem myasthenic thymus. As a control, spleen extracts were found to give slight increases in the neuromuscular reactions.

These results of Constant and his associates offer impressive support to the theory that the symptoms of muscular weakness in myasthenia gravis result from blocking of conduction from motor nerve to muscle by a thymic factor. This theory has developed from much consistent evidence. Many surgeons have confirmed Blalock's observation[4] that surgical removal of a persistent thymus results often (but not always) in curing or improving myasthenia gravis. Trethewie and Wright and Torda and Wolff[5] showed that thymus extracts or serum from patients with myasthenia inhibit acetylcholine synthesis. The dramatic relief of symptoms of myasthenia gravis by eserine derivatives, as first shown by Walker in 1935,[6] may be explained by the action of such drugs in offsetting the effect of the thymic factor on acetylcholine. The report of Constant and his associates should stimulate study on the character of the thymic muscle inhibitor. These observations afford evidence in justification of surgical removal of a persistent thymus in myasthenia gravis.

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[1] McEachern, D.: The Thymus in Relation to Myasthenia Gravis, Medicine **22**: 1, 1943.

[2] Constant, G.; Porter, E. L.; Andronis, A., and Rider, J. A.: The Effect of Thymis Extracts on Neuromuscular Response, Texas Rep. Biol. & Med. **7**: 350, 1949.

[3] Porter, E. L., and Wharton, P. S.: Irritability of Mammalian Nerve Following Ischemia, J. Neurophysiol. **12**: 109, 1949.

[4] Blalock, A.: Thymectomy in Treatment of Myasthenia Gravis, J. Thoracic Surg. **13**: 316, 1944.

[5] Trethewie, E. R., and Wright, R. D.: Acetylcholine Synthesis and Myasthenia Gravis, Australian & New Zealand J. Surg. **12**: 244, 1944; Torda, C., and Wolff, H. C.: Effect of Blood Serum from Patients with Myasthenia Gravis on the Synthesis of Acetylcholine in Vitro, J. Clin. Investigation **23**: 649, 1944.

[6] Walker, M. B.: Case Showing the Effect of Prostigmin on Myasthenia Gravis, Proc. Roy. Soc. Med. **28**: 759, 1935.

Current Comment

INTERN AND RESIDENT TRAINING PROGRAM

Within the next few weeks forms requesting information from hospitals approved for intern and resident training will be forwarded by the Council on Medical Education and Hospitals to more than 1,300 hospitals. The statistical data which are published in the annual Internship and Residency Number of THE JOURNAL are based on information furnished in these forms. After publication of this issue, the Council on Medical Education and Hospitals invariably receives communications from some hospitals calling attention to inaccuracies or to the omission of information in the listing. Such errors usually result from failure of the hospital to fill in the form accurately or to report changes after submission of the report. Additional information sometimes is submitted without satisfactory explanation. The annual list of approved internships and residencies provides information to prospective applicants for appointments and is the basis for many statistical studies concerning graduate training. It is important for hospitals to supply complete information if mistakes in the annual census report are to be avoided.

THE MASSACHUSETTS UNION HEALTH BILL

The Massachusetts Legislature passed and Governor Dever signed, in August, a bill authorizing towns and cities of Massachusetts to form union health departments. The Massachusetts commissioner of public health, Dr. Vlado A. Getting, designated this as "the most important health legislation which has been passed since the establishment of our State Department of Public Health in 1869." The law permits small communities which could not themselves provide adequate public health services to act jointly with their neighbors in providing public health services. As pointed out by Dr. Getting:

> In the horse-and-buggy days communities were fairly well isolated but with the introduction of the horseless carriage a change rapidly took place. Today citizens in remote areas can travel easily from the Berkshires to the Boston Common. We must realize that communicable diseases have no respect for town lines and face the fact that with our present-day travel facilities we are truly one community. The small municipality, therefore, should have preventive services such as are now available in larger cities. However, in 113 towns, there is no health officer at all. Each of the 351 cities and towns has its own board of health and only a few of these have attempted to improve their services by acting jointly with their neighbor. An outstanding example is the Nashoba Health Unit. Here twelve communities have pooled their assets and are making available to their rural communities the same services that are available in large cities.

This action by Massachusetts is in accord with the positive policy for developing local health units by counties individually or jointly, urged by the American Medical Association, the American Public Health Association, the General Federation of Women's Clubs, the National Congress of Parents and Teachers, the National Grange, the National Health Assembly, the National Organization of Public Health Nursing and other agencies. Such progressive health programs will do more to maintain and promote the health of the American people than visionary schemes for nationalizing medical and health services. Establishment and maintenance of such public health services is one of the points in the twelve point health program of the American Medical Association.

DERMAL EXCRETION OF IRON

The classical concepts of iron metabolism have been based on the belief that the body will absorb from the intestine only the amount it needs, the remainder of the dietary iron passing unaltered through the body. Thus fecal iron represents mainly the unabsorbed iron plus the small amount lost in the bile. The existence of other avenues of excretion of iron is indicated by the data of Mitchell and Hamilton,[1] who report the loss of several minerals, including iron, in the sweat of human subjects. Subjects were exposed to two different environments, each carefully controlled with respect to temperature and humidity. One, a hot humid atmosphere which promoted profuse sweating, had a temperature of 37 to 38 C., with a relative humidity of 65 to 73 per cent. The other, a comfortable environment, had a temperature of 27 to 28 C., with a relative humidity of 43 to 45 per cent. In one series of 3 persons exposed to the hot humid conditions, 37 per cent of the ingested iron was lost in the sweat while only 0.7 per cent was excreted by the kidney. Under comfortable environmental conditions, 13 per cent of the iron intake was lost through the skin and only 2.2 per cent was excreted in the urine. The concentration of iron in the sweat does not appear to be affected by the rate of production of perspiration. These values are calculated from the iron content of sweat collected over a period of only a few hours. Under conditions which would cause minimal production of sweat, approximately 0.27 mg. of iron was found to be lost per hour through the skin. Calculated on a twenty-four hour basis, 6.5 mg. of iron appears to be excreted per day by the skin. As the recommended iron requirement for the adult is 12 mg. per day, little more than 50 per cent of the requirement is lost in this manner. This work is of sufficient importance to warrant further study in both normal persons and patients in whom increased or possibly decreased iron losses would be clinically significant.

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[1] Mitchell, H. H., and Hamilton, T. S.: J. Biol. Chem. **178**: 345 (March) 1949.

ORGANIZATION SECTION

Official Notes

STATEMENT BY THE BOARD OF TRUSTEES ON INVESTIGATIONS OF MEDICAL ORGANIZATIONS

On Sept. 21, 1949, the Secretary of the American Medical Association received the following letter signed by Hebert A. Bergson, Assistant Attorney General, Department of Justice, Washington, D. C.:

"In connection with an investigation by this Department of alleged violations of the federal antitrust laws in the medical field, it is requested that you make available for examination by the bearer, an agent of the Federal Bureau of Investigation, such of your files as he may request.

Your cooperation in this investigation will be very much appreciated."

On October 6 the Board of Trustees of the American Medical Association released to the press a statement after revealing that fifteen state and county medical societies, and other organizations, had come under investigation within thirty days. According to the Board of Trustees, the medical groups under investigation include the American Medical Association, New York State Medical Society, Utah State Medical Association, Washington State Medical Society, Arkansas Medical Society, Oklahoma State Medical Association, Los Angeles County Medical Society (California), Beckman County Medical Society (Oklahoma), Wayne County Medical Society (Michigan), Harris County Medical Society (Texas), King County Medical Society (Washington), New York County Medical Society (New York), Nassau County Medical Society (New York), Queens County Medical Society (New York) and the Michigan Medical Service (a Blue Shield prepaid medical care plan). The statement released by the Board of Trustees was as follows:

"This is an official statement of the Board of Trustees of the American Medical Association, protesting the use of a police arm of the Government—namely, the Anti-Trust Division of the Department of Justice—in a campaign to discredit American medicine and terrorize physicians into abandoning their opposition to Compulsory Health Insurance.

"The A. M. A. has opened its records to the Justice Department, without reservation, and medical societies throughout the country undoubtedly will do likewise, but we intend to keep the public fully informed of developments, as we are convinced that these are not bona fide antitrust investigations, and that the American people will not tolerate Police State methods in this country.

"We would be naive, indeed, if we ignored the political implications of this sudden rush of investigations, attacking medical societies, at a time when the Administration is doing its utmost to stifle opposition to its proposed system of Government-controlled medical care.

"This scheme, it is specifically provided, would be a Government-monopoly, to which every citizen would be compelled to contribute, and which would destroy all the hundreds of Voluntary Health Insurance systems which now provide prepaid health care for more than 61,000,000 of the American people.

"Certainly it will be a travesty on justice if the Anti-Trust Division of the Justice Department can be used to silence opposition to the creation of a Government-trust in medicine.

"The American people, we believe, will hardly think it a coincidence that these antitrust investigations should be ordered at this time—after there have been repeated threats that medical groups would be 'investigated' because of their opposition to socialized medicine.

"The chronology of events, since the American Medical Association decided to make a nationwide campaign against Compulsory Health Insurance, and in behalf of Voluntary Health Insurance, is, we believe, of real significance.

"In November 1948, the A. M. A., at its midwinter meeting, voted to collect funds from its members to finance a campaign of public education on this issue. A public announcement was made to that effect.

"Only a month later, in December, agents of the Department of Justice called on the Chicago Medical Society, seeking to check the Society's records in connection with an alleged antitrust investigation.

"During the February session of the Board of Trustees of the A. M. A., in the early hours of February 10, the Board Room was broken into and records of the Board were thoroughly searched by persons unknown. Brief cases of the Trustees, left in the room, also were searched. Entrance was gained through a window. The facts indicate this was a search for information, rather than an ordinary burglary. Certainly no friends of medicine would take this means of obtaining medical data.

"A few weeks later, toward the end of February, Administration leaders began threatening medical societies and medical men with 'investigation' as part of their campaign to discredit and intimidate the medical profession. Since then, there hasn't even been much attempt to disclaim the political nature of these investigations.

"On February 28, 1949, for example, one of the National press associations carried a dispatch from Washington quoting Government officials as stating that antitrust actions would be started against 'several' medical societies soon after the Compulsory Health Insurance drive was started in Congress.

"The implication was plain that the 'investigation' would be part of the Administration's campaign for its socialized medicine scheme.

"The threats made then are now realities. An epidemic of 'investigations,' aimed at medical societies and voluntary medical care plans, has broken out in widely separated states and cities all over the country.

"We want it clearly understood that we believe this attack on the medical profession stems from the Anti-Trust Division of the Justice Department and political string-pullers who have exerted influence on that agency. We believe it to be an outrageous abuse of public power which far transcends in gravity the issue of Compulsory Health Insurance, vital as that issue is.

"We recognize that politically motivated attacks have been made on many other groups by this division of the Government —and we invite their cooperation with American medicine in an effort to alert the American people to the seriousness of this trend toward Police State methods. If the police arm of the Government is used to intimidate doctors and others, and this abuse of power goes unchallenged, it may next be used to terrorize publishers or grocers, farmers or lawyers, Catholics or Jews, or any other minority in the Nation."

THE MIDYEAR CLINICAL MEETING

The third annual midyear meeting of the American Medical Association, the 1949 Clinical Session, to be held in Washington, D. C., December 6-9, will present a scientific program especially designed for the general practitioner. Among the subjects for discussion by clinicians are diabetes, pediatrics, laboratory diagnosis, physical medicine and rehabilitation, arthritis, dermatology, roentgen diagnosis, cancer and poliomyelitis. In addition, about a hundred scientific exhibits will present original work on the subjects under discussion. The newest offerings of one hundred and twenty-five manufacturing firms will comprise the Technical Exposition. Both exhibits will be in the National Guard Armory, Capitol Avenue and East Nineteenth Street.

Televised surgical and clinical procedures, similar to those shown in color at the annual session in Atlantic City last June, will be presented at the Washington meeting. Surgical operations in the Johns Hopkins Hospital may be viewed on screens in the armory.

The general practitioner of the year will be selected and awarded a medal. The entertainment program will be highlighted by a broadcast of Philip Morris' "This Is Your Life" from the Hotel Statler, convention headquarters.

Requests for reservations should be sent before November 9 to the Chairman of the Subcommittee on Hotels, American Medical Association Hotel Reservation Bureau, Star Building, Washington 4, D. C.

DIET MANUAL FOR DIABETICS

A 16 page pocket-size diet manual for physicians to give to their diabetic patients has been prepared by the Bureau of Health Education of the American Medical Association. It provides space for the physician to enter his individual patient's daily gram requirements in each of the main food groups. Corresponding as well as related foods are listed according to the number of grams a patient may take and stay within his daily requirement. A plain, washable, plastic cover permits the manual to be used inconspicuously in public, its strong paper stock resists dog-earing, and type is large and bold. Spaces for the patient's and the physician's name, address and telephone number are inside the cover. An introduction encourages cooperation with the physician and includes a statement for persons using insulin. For information address Bureau of Health Education, American Medical Association, 535 North Dearborn, Chicago.

Washington Letter

(From a Special Correspondent)

Oct. 10, 1949.

New Health Legislation Filed in Congress

Although the Democratic leadership in Congress has indicated that every effort will be made to achieve adjournment before the end of October, new bills on health and medical subjects continue to be introduced in both houses. One of them (S. 2642), sponsored by Senator Wayne Morse (Rep., Oregon), authorizes a $100,000,000 (annually) program of federal assistance to the states for betterment of mental hospitals and institutions. Funds could be used for construction, supplies, equipment, personnel "and any other use appropriate to the caring for the mentally sick." A similar bill was sponsored by Senator Morse in the 80th Congress but died in committee.

Representative James G. Fulton (Rep., Pennsylvania) has introduced H. R. 6324, which provides for establishment of a federal research institute on arthritis, rheumatism and metabolic diseases and another devoted to neurologic diseases and blindness. This is a companion bill to a measure that has been passed by the Senate.

Poliomyelitis is the subject of a bill filed by Representative Vito Marcantonio (American Labor, New York). This measure (H. R. 6253) would create a Poliomyelitis Research Agency, headed by a director having an annual salary of $25,000.

H. R. 5876, liberalizing the Army-Navy Nurses Act of 1947 in order to stimulate recruitment, was favorably reported to the House October 4 by the Armed Services Committee. On October 3 the Senate Committee on Interior and Insular Affairs voted a favorable report on S. 2404, which authorizes a federal $1,800,000 contribution to assist in construction of a general hospital at Albuquerque, N. Mex., which will have an 80 foot wing for the care of Indians.

Another newly introduced bill (H. R. 6327) has as its purpose the modification of professional requirements for those pharmacists employed by Veterans Administration who were appointed prior to July 1, 1947.

Water-Pollution Advisors Make Recommendations

At its Washington meeting October 3-4, the recently organized Water Pollution Control Advisory Board recommended to Surgeon General Leonard A. Scheele that the $200,000 appropriation which is available this year be concentrated on just a few river basins instead of being widely dispersed throughout the country. Also recommended were the "essentials" of a uniform state law for strengthening of pollution control activities by the several states. Formation of a technical committee to review prospective research projects was urged by the advisory group, which also endorsed continuation of special grants for study and research projects having sectional or national significance.

Twelve Federal Grants for Mental Research

Federal Grants in aid for research in mental and emotional disorders have been sent past the $1,000,000 mark with the allocation of $139,923 early in October. The sum will be divided among twelve projects, the majority of them in medical schools. Previous commitments, since 1947, when government funds first became available for support of neuropsychiatric research, totaled $974,944.

The latest grantees are: Massachusetts General Hospital, $26,308, prefrontal lobotomy studies; University of Iowa, $3,915, anxiety and frustration in animal behavior; Illinois Institute of Technology, $9,400, analysis of topical autobiographies of displaced persons; New York State Department of Mental Hygiene, $7,000, statistical studies; New York University College of Medicine, $21,276, childhood schizophrenia; New York University College of Medicine, $3,726, changes in perceptual functions in organic psychoses; Columbia University, $7,344, psychologic factors in amenorrhea; Columbia University, $13,700, psychosomatic aspects of ulcerative colitis; Institute for Juvenile Research, Chicago, $3,900, analysis of psychophysiologic data on hypnosis and on emotional and behavior disorders; Columbia University, College of Physicians and Surgeons, $7,128, space-controlled neural lesions; Wayne University, $19,364, cultural and psychiatric factors in mental health of Hutterites, and University of Washington School of Medicine, $16,262, cingulate gyrus of cerebral cortex, functions and connections.

Eighteen Institutions Receive AEC Research Assistance

Atomic Energy Commission, through its Division of Biology and Medicine, has approved eighteen projects for financial assistance. Amounts of the awards were not disclosed. During the present fiscal year, ending June 30, 1950, the commission has $5,000,000 available for allocation among nonfederal institutions engaged in fundamental research in medicine, biology and biophysics. Latest beneficiaries are: University of Oregon Medical School, Massachusetts General Hospital, University of Tennessee, Peter Bent Brigham Hospital (Boston), Presbyterian Hospital (Chicago), Harvard University (two projects), University of Denver, Syracuse University, Washington University at St. Louis, University of Illinois, Iowa State College, Texas Agricultural and Mechanical College, University of Chicago, University of Washington (two projects), University of Wisconsin and University of Pennsylvania.

"Anti-Atomic Hospital" Model Displayed in Capital

Members of Congress, executives of federal agencies and prominent physicians and hospital administrators attended a special Washington showing October 6 of a model of an architecturally novel hospital proposed for construction in Long Beach, Calif. The building would have a conventional superstructure, but, in addition, there would be full underground facilities for use in event of emergency. Depth and overhead protection purportedly adequate to make the plant invulnerable to atomic blast are provided for, according to the project's California sponsors. Host at the Washington showing was Representative Clyde Doyle, of Long Beach. Incidentally, Representative Doyle is a member of the seven man special House committee, appointed October 6 by Speaker Sam Rayburn, whose task will be to conduct an investigation of Washington lobbying activities.

Census of Nurses Completed

A census of registered professional nurses in the United States and territories, conducted at the request of National Security Resources Board, has been completed by the American Nurses' Association, according to an announcement by the board. The inventory was under direction of Dr. Norvin C. Kiefer, director of the board's health resources division, and Miss Ruth Freeman, chief of the board's nursing section.

Federal Funds for Glaucoma Studies

The U. S. Public Health Service has entered into an agreement with the Philadelphia Committee for Prevention of Blindness whereby the former will make about $10,000 available to assist the Philadelphia group in its glaucoma-detection program. Conceived as a pilot study, which will help determine whether similar invesitgations will be conducted in other parts of the country with government aid, the grant will be used chiefly for payment of salaries to personnel.

Birmingham Veterans Administration Hospital

Contracts for construction of a 500 bed Veterans Administration hospital at Birmingham, Ala., have been awarded, aggregating $5,999,000. The principal contract, $5,723,000, went to the firm of Thompson & Street, Charlotte, N. C. The contract for elevator installation for $276,000 went to the Otis Elevator Co.

Woman's Auxiliary

WEST VIRGINIA

The Woman's Auxiliary to the Kanawha County Medical Society and the executive board of the Woman's Auxiliary to the State Medical Association will hold a joint luncheon October 11 at the Ruffner Hotel, Charleston, at which the wives of the interns and residents at hospitals in that area will be guests and the members of the Kanawha Auxiliary will be permitted to bring guests. Members of the advisory board to the auxiliary will also be guests at the luncheon. In addition to the president of the state auxiliary, Mrs. Dana T. Moore, Thomas A. Hendricks, secretary of the Council on Medical Service of the American Medical Association, Chicago, will speak. Mrs. W. A. Thornhill Jr., of Charleston, president of the Kanawha Auxiliary, will preside at the luncheon.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

Annual Conference of State Secretaries and Editors, Chicago, A. M. A. Building, Nov. 3-4. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Ambulatory Fracture Association, Toronto, Canada, Royal York Hotel, Oct. 24-27. Dr. H. W. Wellmerling, 120 S. LaSalle St., Chicago 3, Secretary.

American Academy of Pediatrics, San Francisco, Nov. 14-17. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Clinical and Climatological Association, White Sulphur Springs, W. Va., The Greenbrier, Oct. 27-29 Dr. James Bordley III, Bassett Hospital, Cooperstown, N. Y., Secretary.

American College of Surgeons, Chicago, Stevens Hotel, Oct. 17-21. Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Public Health Association, New York, Oct. 24-28. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 5-7. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

American Society of Tropical Medicine, Memphis, Tenn., Nov. 6-9. Dr Frederick J. Brady, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Nov. 10-12. Col. James M Phalen, Army Institute of Pathology, Washington 25, D. C., Secretary.

Central Society for Clinical Research, Chicago, Drake Hotel, Nov 4-5. Dr. Kenneth G. Kohlstaedt, 960 Locke St., Indianapolis 7, Secretary.

Conference of State and Provincial Health Authorities of North America, New York, Oct. 28. Dr. Russell O. Saxvik, State Health Officer, Bismarck, N. D., Secretary

District of Columbia, Medical Society of the, Washington, Hotel Statler, Oct. 17-19. Mr. Theodore Wiprud, 1718 M St. N.W., Washington 6, Secretary.

Inter-American Congress of Surgery, Chicago, John B. Murphy Memorial Auditorium, Oct. 21-23. Dr. Alton Ochsner, 1430 Tulane Ave., New Orleans, Chairman Program Committee.

International College of Surgeons, United States Chapter, Atlantic City, Haddon Hall, Nov. 7-12. Dr. Arnold S Jackson, 1516 Lake Shore Drive, Chicago 10, Secretary.

Inter-State Post Graduate Medical Association of North America (International Medical Assembly), Philadelphia, Oct 31-Nov. 3. Dr. Tom B. Throckmorton, Equitable Bldg., Des Moines, Iowa, Secretary.

National Gastroenterological Association, Boston, Hotel Somerset, Oct 24-26. Dr. Sigurd W. Johnsen, 1818 Broadway, New York 23, Secretary

Neurosurgical Society of America, Quebec, Canada, Chateau Frontenac, Oct. 30-Nov. 1. Dr. Edward Schlesinger, 710 W. 168th St., New York, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 24-27. Dr. F. Maxey Cooper, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Cincinnati, Nov. 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Southwestern Medical Association, Albuquerque, New Mexico, Nov. 9-12 Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Texas, Secretary.

Western Orthopedic Association, Santa Barbara, Calif., Biltmore Hotel, Oct. 19-21. Dr. Charles W. Gilfillan, 1680 N. Vine St., Hollywood, Calif., Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

NAVY

DUTY UNDER INSTRUCTION

The following medical officers have been nominated for duty under instruction in the Navy's post-graduate medical training program:

Comdr. Ferdinand V. Berley, to a residency in general surgery, Naval Hospital, Philadelphia.

Comdr. Richard W. Garrity, to a residency in neurosurgery, Massachusetts General Hospital, Boston.

Comdr. Leslie W. Langs, to a fellowship in radiology, University of Chicago Department of Roentgenology.

Comdr. Martin Cooperman, to a residency in psychiatry at Chestnut Lodge, Rockville, Md., from a residency in neuropsychiatry at the Naval Hospital, National Naval Medical Center, Bethesda, Md.

Comdr. John L. Hatch, Dayton, Texas, to a residency in radiology at the Naval Hospital, Long Beach, Calif., from NOB, Guam, M.I. (graduated: Baylor University School of Medicine).

Comdr. Roy W. Tandy Sr., Morning Sun, Iowa, to instruction in obstetrics and gynecology at the University of Pennsylvania Graduate School of Medicine, Philadelphia, from the Naval Hospital, Seattle (graduated: Washington University School of Medicine).

Lieut. Comdr. Walter Patterson, to instruction in ophthalmology at the University of Pennsylvania Graduate School of Medicine, Philadelphia, from USS *Mindoro*.

Lieut. Comdr. Elmer R. King, to instruction in radiologic defense in the Medical Division, Institute of Nuclear Studies, Oak Ridge, Tenn.

Lieut. Stevenson P. Santiago-Stevenson, to a residency in obstetrics and gynecology, Naval Hospital, Portsmouth, Va.

Lieut. Haskell M. Wertheimer, to a residency in surgery, Naval Hospital, Oakland, Calif.

Lieut. Nathaniel Sharp, to a residency in surgery, Naval Hospital, Chelsea, Mass.

Lieut. (jg) Thomas B. Delaney, to a residency in pediatrics, Naval Hospital, Chelsea, Mass.

Lieut. (jg) Robert F. Dykhuizen, to a residency in urology, Naval Hospital, Long Beach, Calif.

Lieut. (jg) George F. Elsasser Jr., to a residency in pathology, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Francis J. Lineham Jr., to a residency in internal medicine, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Deane E. McLeod, to a residency in obstetrics and gynecology, Naval Hospital, San Diego, Calif.

Lieut. (jg) Vernon J. Merkle, to a residency in obstetrics and gynecology, Naval Hospital, San Diego, Calif.

Lieut. (jg) Delmer J. Pascoe, to a residency in internal medicine, Naval Hospital, Long Beach, Calif.

Lieut. (jg) William B. Raulston, to a residency in obstetrics and gynecology, Naval Hospital, Long Beach, Calif.

Lieut. (jg) Henry A. Sparks, to a residency in internal medicine, Naval Hospital, Long Beach, Calif.

Lieut. (jg) Ray T. Smith Jr., to a residency in anesthesiology, Naval Hospital, Philadelphia.

Lieut. (jg) Robert E. Walsh, to instruction in anesthesiology, University of Pennsylvania Graduate School of Medicine, Philadelphia.

Lieut. (jg) Donald J. Doohen, to a residency in surgery, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) James E. McClenathan, to a residency in surgery, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Robert K. Barton, to a residency in obstetrics and gynecology, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) David G. Dixon, to a residency in obstetrics and gynecology, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) John H. Eversole, to instruction in submarine medicine, Submarine Base, New London, Conn.

Lieut. (jg) John R. Shanahan, to a residency in internal medicine, Naval Hospital, Bethesda, Md.

Lieut. (jg) Peter F. Wells II, to a residency in obstetrics and gynecology, Naval Hospital, Long Beach, Calif.

Lieut. (jg) David G. Doane, 38 Rockland Street, Swampscott, Mass., to a residency in obstetrics and gynecology at the Naval Hospital, Chelsea, Mass., (graduated: Tufts College Medical School).

Lieut. (jg) Carl L. Ebnother, 79 Pleasant Street, San Francisco, to a residency in internal medicine at the Naval Hospital, Oakland, Calif. (graduated: George Washington Medical School).

Lieut. (jg) Edwin S. Gomsi, Route 1, Box 252, Eveleth, Minn., to a residency in obstetrics and gynecology at the Naval Hospital, Long Beach, Calif. (graduated: University of Minnesota School of Medicine).

Lieut. (jg) Earl R. Peters, Fort Blackmore, Va., to a residency in pediatrics at the Naval Hospital, Chelsea, Mass. (graduated: Medical College of Virginia).

Lieut. (jg) Paul H. Visscher, 3369 West 30th Street, Cleveland, to a residency in general practice at the Colorado General Hospital, Denver (graduated: Western Reserve University School of Medicine).

Lieut. (jg) Charles C. Wannemaker, 165 Oakland Place, Orangeburg, S. C., to a residency in interral medicine at the Naval Hospital, Chelsea, Mass. (graduated: South Carolina Medical College).

Lieut. (jg) Elmer A. Weden Jr., 43 Brookfield Street, Manchester, Conn., to a residency in general surgery, at the Naval Hospital, St. Albans, N. Y. (graduated: New York University School of Medicine).

SEA DUTY FOR NAVY NURSES

The Surgeon General announces that Navy nurses will replace Army nurses on vessels of the Military Sea Transportation Service, which was established October 1. About fifty sea duty billets on transports are available to inactive members of the Nurse Corps, U. S. Naval Reserve, in the grades of lieutenant and lieutenant junior grade. Applications are desired now from inactive naval reserve nurses to volunteer for this duty for a minimum period of one year. Commencing in December 1949, Navy nurses will be assigned to transports operating out of New York, New Orleans, San Francisco and Seattle to European and Asiatic ports. In submitting application, nurses may request active duty at a naval hospital in her home Naval district prior to assignment to the sea billet. Applications should be submitted to the Bureau of Naval Personnel, the Bureau of Medicine and Surgery, via the commandant of the naval district in which the nurse resides.

PUBLIC HEALTH SERVICE

WATER POLLUTION CONTROL BOARD

The second meeting of the Water Pollution Control Advisory Board was held in Washington, D. C., October 3-4. The board of 11 members reviewed the present status of programs being developed by the Public Health Service and the General Services Administration, which agencies have been assigned joint administration of the Water Pollution Control Act of 1948. Complication of basic data is under way in many areas, and, when completed, the programs will form the basis from which a national program of water pollution control can be launched. The chief aim of the law is to improve the sanitary condition of waterways. The program, the total cost of which has been estimated at between $5 and $8 billion, is being carried out by the combined efforts of states, cities, industries and the federal government. The present Congress has appropriated $2,725,000 to start the program.

FOREIGN EXPERTS TO ADVISE ON HEALTH MATTERS

A release from the U. S. Public Health Service, dated October 1, states, "At the request of Dr. Leonard A. Scheele, Surgeon General of the Public Health Service, and Chief of the American Delegation to the Second World Health Assembly, a number of experts from foreign countries have been invited through the World Health Organization to advise this Government on major health matters." The first expert to arrive under that program is J. C. Dawes of England, who will confer with officers of the Public Health Service, Pan American Sanitary Bureau, State Health officials and others concerned with sanitation matters, Federal Security Administrator, Oscar R. Ewing, explained. According to Surgeon General Scheele, "Mr. Dawes is probably the world's most distinguished authority on refuse disposal." He originated the system of sanitary land fills now widely used in this country for the dual purpose of refuse disposal and reclamation. He is a member of the Institution of Mechanical Engineers and an honorary member of the American Public Works Association and holds the Royal Order of Commander of the British Empire.

PERSONAL

Dr. Carl Neuberg, formerly director of the Kaiser Wilhelm Institute for Experimental Therapy, has begun a special research fellowship at the National Cancer Institute, Bethesda, Md. Dr. Neuberg is said to have coined the word "biochemistry" when he founded the *Biochemische Zeitschrift*, one of the first European journals of biochemistry. While he will continue his work on phosphorus compounds in tumors at the Polytechnic Institute of Brooklyn, he will work part time with Dr. J. P. Greenstein, chief of the Biochemistry Section in the National Cancer Institute.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Lovegren, Lloyd A.	Birmingham
Low, Robert E.	Mobile
Palmes, Wesley C. Jr.	Mobile
Ross, John E. Jr.	Jasper
Wiley, Thomas M. Jr.	Decatur

Arkansas

Quattlebaum, Leon	El Paso

Arizona

Purcell, Howard M.	Phoenix

California

Bennett, James H.	Oakland
Coman, Charles P.	Los Angeles
Cusick, George C.	Berkeley
Duffy, John C.	San Quentin
Lee, Peter V. A.	Stanford University
Neal, John B.	San Diego
Nerlich, William E.	Los Angeles
Thayer, Elwyn A.	Quincy
Torrey, Robert R.	Glendale
Weaver, Philip T.	South Pasadena
Wright, Edwin T.	Glendale

Colorado

Croke, Autrey R.	Denver
Kitchen, Benjamin F. Jr.	Loveland

Connecticut

Chase, Lewis S.	Hartford
Cusanelli, Gabriel N.	New Haven
Heins, Jacob W.	Darien
Rosoff, Chester B.	Hamden

Georgia

Brown, Herbert E.	DeKalb
Carrasco, Enrico D.	Newnan
Delaney, Herman	Cartersville
Roberts, James A.	Roswell
Statham, George W.	Athens

Illinois

Brown, Harold Z.	Chicago
Craven, Edward B. Jr.	Chicago
Hogness, John R.	Chicago
Hough, Victor H.	Chicago
Icenogle, Richard E.	Mattoon
Jolley, Harold N.	Wood River
Kessler, William	Chicago
Kousnetz, Irving	Chicago
Marsh, William L.	Chicago
Michaels, Henry M.	Elmwood Park
Selfridge, Frederick M.	Oak Park

Indiana

Diamond, Jack R.	Indianapolis
Edinger, Edward F. Jr.	Bedford
Hendershot, Eugene L.	Evansville
King, Donald P.	Columbus
Mather, Robert L.	Lafayette
Patterson, Cecil L.	New Albany

Iowa

Cretzmeyer, Charles H.	Algona
Day, Richard T.	Brighton
Hamilton, William K.	Panora
Nelson, Herbert L.	Plover
Votteler, Robert E.	Fenton

Kansas

Ewing, Thomas D.	Lyons
Flynn, Robert Q.	Topeka
Johnson, Charles A.	Wamego
Miller, William J.	Topeka

Kentucky

Ross, Paul J.	Nepton

Louisiana

Antin, Sidney H.	New Orleans
Baker, DeWitt T. Jr.	Alexandria
Comeaux, Walter B. Jr.	Houma

Louisiana—Continued

Morvant, Richard A.	Thibodaux
Phillips, Jack H.	Baton Rouge
Ventre, Emil K. Jr.	Baton Rouge

Maryland

Day, Lewis R.	Cumberland
Driggs, Guy K.	Baltimore

Massachusetts

Aloia, Anthony F.	Brighton
Chaplik, Anthony J.	South Boston
Collard, Kenneth L.	Belchertown
Gemmellaro, Salvatore P.	Gloucester
Koretsky, Sidney	Chelsea
Longo, Vincent J.	Leominster
Mead, Jere	Cambridge
Rowell, Russell J.	Beverly
Sullivan, Robert J.	Fall River
Wallace, Joseph S.	Brookline
Weinberger, Morris A.	Boston

Michigan

Fisher, John H.	Tipton
Goudie, Frederick D.	Detroit
Munnell, Edward R.	Jackson
Olsen, Robert G.	Saugatuck
Rosow, William A.	Detroit
Zimmerman, Walter J.	Berkley

Minnesota

Berg, Clinton C.	St. Paul
Jarvis, Charles W.	Minneapolis
Wolff, John M.	Duluth

Missouri

Bishop, Marion D.	St. Louis
Brody, Eugene B.	Columbia
Jackson, James O.	St. Louis
McConnell, Robert B.	St. Joseph

Montana

Zuelka, Paul E.	Alberton

New Jersey

Albert, Roy E.	Weehawken
Boysen, Homer W.	Egg Harbor City
Carnecchia, Baldo M.	Lyndhurst
Resnick, Eugene V.	Passaic
Woodward, William M.	Collingswood

New York

Balensweig, Howard D.	New York
Blackman, Lionel H.	New York
Carrozza, Natale S.	Brooklyn
Cave, Linus W.	Syracuse
Davidson, Donald R. II	Hancock
Gabel, Harold	New York
Joseph, Clifford	Brooklyn
Kasinoff, Bernard H.	Brooklyn
Lehman, J.	Brooklyn
Linder, Anatol	Brooklyn
Linder, F. T.	Mount Vernon
Lobell, H. R.	New York
Lowy, A. C.	New York
Lucey, E. D.	Emerson Hill
Luetters, John Thielt	New York
Madison, Leonard Lincoln	Brooklyn
Mandel, Edward H.	Brooklyn
Marbach, Bernard Otto	White Plains
Margolis, Abraham H.	Bronx
Martin, K. J.	Horseheads
Mastrianni, Saverio B.	Mechanicsville
Mattick, John W.	Buffalo
Maxwell, Walter T.	Rochester
Millard, Donald H.	Brooklyn
Mills, Samuel W. Jr.	Middletown
Minard, Lawrence R.	Mineola
Mintzer, Joseph H.	Catskill
Munschauer, Richard W.	Buffalo
Neustrup, Niels	New York
Oropallo, Anthony J.	Auburn
Osgood, Raymond W.	Buffalo
Palumbo, Frank J.	Niagara Falls

New York—Continued

Piscetta, Joseph O.	New York
Planer, C. K.	Syracuse
Pollack, Frank L.	New York
Presant, J. M.	Buffalo
Rafferty, James A.	Rochester
Ragione, Joseph Alfred	Buffalo
Riedy, Thomas F. Jr.	Albany
Robinson, F.	New York
Rosenzweig, L. F.	Rockville Center
Rosso, Albert John	Buffalo
Russo, J. A. Jr.	Flushing
Rutzky, J.	New York
Sanacore, Joseph A.	Brooklyn
Sarraga, Jose Arturo	New York
Savin, S.	Brooklyn
Schiff, S. P.	Brooklyn
Schopfer, Ralph Earl	Syracuse
Schulman, Edward	Brooklyn
Schulman, Irving	Forest Hills
Schwartz, Arthur	New York
Schwartz, I.	Bronx
Seckler, J. J.	Brooklyn
Shapiro, A. P.	Staten Island
Shaver, Ralph C.	Elma
Sherwood, Charles E. II	New York
Shortsleeve, Joseph F.	Elmira
Stamps, F. W.	Niagara Falls
Stathis, J.	Rockaway Beach
Steinberg, Murray	Brooklyn
Suriano, Philip C.	Bronx
Taines, Robert	New York
Tannenhaus, Joseph	Buffalo
Taylor, Robert W. Jr.	Auburn
Tederous, E. M.	Dunkirk
Teicher, M. I.	Brooklyn
Templer, W. C.	Corning
Tifft, Joseph G.	New York
Treder, Frederick H.	Scotia
Treichler, Howard P.	Burt
Walker, J. W.	Canandaigua
Walker, Warren Highley	Rochester
Warner, Wilbur D.	Dunkirk
Weinstein, Robert S.	New Rochelle
Weiss, Jerome	New York
Wells, Kippen C.	Syracuse
Wells, Roe E. Jr.	New York
West, C. D.	Jamestown
West, J. W.	Owego
Yapalater, Alvin R.	New York

Texas

Brown, Donald S.	Dallas
Caplan, Mischa	Houston
Holmes, T. H.	Ralls

Utah

Betteridge, Bryce	Salt Lake City
Herron, Emmett E.	Greenriver
Hunter, John P.	Salt Lake City
Muir, Mark W.	Salt Lake City
Poulson, Stanford E.	Richfield
Spjut, Harlan J.	Salt Lake City
Thomas, Paul H.	Logan

Virginia

Coleman, Claude C. Jr.	Richmond
Harrison, Jacquelin M.	Richmond
Lambdin, Morris A.	Charlottesville
Scherr, Edward H.	Petersburg

Washington

Eidal, Richard A.	Seattle
Kangley, John C.	Zenith
Lipp, Robert G.	Spokane

Wisconsin

Braddock, William H.	Wood
Danaher, Harry H.	Milwaukee
Jones, Francis S.	Madison
Peck, Donald D.	Milwaukee
Rothe, Clarence A. Jr.	Green Bay
Strang, Clive J.	Grantsburg

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Hospital Affiliates with University.—The Employee's Hospital of the Tennessee Coal, Iron and Railroad Company, a subsidiary of the U. S. Steel Corporation, has been added to the Medical College of Alabama, University, as a major clinical teaching unit. One third of the senior class will receive instruction in that institution, the remainder of the clinical instruction being offered in the clinics and wards of the major teaching unit, the Jefferson-Hillman Hospital. The hospital makes available some 400 additional teaching beds and a large system of outpatient clinics. Its clinical faculty will be headed by Dr. Lloyd Noland, recently appointed clinical professor of surgery at the medical college.

COLORADO

Course in Pediatrics.—A graduate course on problems relating to newborn infants, sponsored by the University of Colorado School of Medicine and the Colorado State Department of Health, will be given at the University of Colorado Medical Center, Denver, November 2-5. Lectures, panel discussions and demonstrations will be given by members of the faculty on obstetric aspects of prematurity, resuscitation, nutrition, isoimmunization, psychologic problems related to premature birth, community planning, infections and the interpretation of laboratory findings in the newborn. The guest lecturer is Dr. William L. Bradford, Rochester, N. Y. The course is open to graduates of medical schools approved by the American Medical Association. The registration fee is $5 and the tuition $10. Inquiries should be directed to Director, Graduate and Postgraduate Medical Education, University of Colorado School of Medicine, Denver.

Conference on Industrial Health.—The first Rocky Mountain Conference on Industrial Health will be held in the Denver Chamber of Commerce Building, Denver, October 31-November 2. This conference is sponsored by the Division of Industrial Medicine of the University of Colorado School of Medicine, Denver; the Colorado State Division of Public Health; Colorado Manufacturers Association; Colorado Chamber of Commerce, and the Denver Chamber of Commerce. The five sessions are open to company executives and attorneys, safety engineers, personnel managers and plant physicians. The purpose is to inform the representatives of industry concerning the need for and the purpose of industrial health programs. Those attending are invited to bring to these meetings specific questions and problems, which will be answered by a panel of experts. For information address, Chairman of the Program Committee, Frank Princi, M.D., First Rocky Mountain Conference on Industrial Health, 4200 East Ninth Avenue, Denver.

GEORGIA

Cancer Clinic Day.—Dr. George T. Pack, New York, will be the principal speaker at the Annual Clinic Day at the Sheffield Cancer Clinic of the Georgia Baptist Hospital in Atlanta, at 2 p. m. November 4. His subject will be "Cancer of the Breast." All physicians are cordially invited.

Appoint Public Relations Director.—Mr. Edward L. Bridges, for eight years associated with the Southern Bureau of the Associated Press, with headquarters in Atlanta, was appointed this summer as director of public relations for the Medical Association of Georgia. He is the first public relations director of the society.

ILLINOIS

Assembly Hour Lectures.—Assembly hour lectures were delivered at the University of Illinois, Chicago Professional Colleges, on October 5 by Sir Jack C. Drummond on "Human Nutritional Requirements in the Light of Experience in the United Kingdom, 1939-1949," and on October 12 by Van R. Potter, Ph.D., Madison, Wis., on "Enzyme Studies on the Cancer Problem."

Chicago

Interns and Residents Meeting.—The Mercy Hospital Internes and Residents Alumni Association will hold their annual meeting Saturday, October 22. There will be clinics in the morning at Mercy Hospital followed by a business meeting and luncheon at the hospital. An informal dinner dance will be held at the Blackstone hotel following a social hour, which begins at 6 o'clock.

KENTUCKY

Adopt Faculty-Advisers Plan.—The University of Louisville School of Medicine has adopted the faculty-adviser plan. Small groups of medical students will be assigned advisers who will keep closely in touch with the students' progress in school in order to assist them to improve in their studies. Students in turn will be free to seek advice from any faculty members.

Assign Students to County Health Departments.—Plans are being made to double next year the scope of a summer training program in which medical students are assigned to county health departments in Kentucky. This summer nineteen students worked with as many county health units in an experimental project whereby future doctors became acquainted with community health problems. Students were paid from Kentucky State Department of Health training funds. All were from the University of Louisville School of Medicine except one from the University of Cincinnati (Ohio) College of Medicine.

MINNESOTA

Rigler Lecture.—Dr. John Caffey, associate professor of pediatrics in the College of Physicians and Surgeons, Columbia University, New York, will present the annual Leo G. Rigler lecture in the auditorium of the Minnesota Museum of Natural History at the University of Minnesota Medical School November 2 at 8:15 p. m. Dr. Caffey will speak on "Some Normal Variations in the Growing Skeleton: Their Clinical Significance."

Minneapolis Society of Internal Medicine.—The first meeting of the Minneapolis Society of Internal Medicine will be held in the Colony Restaurant, Medical Arts Building, October 19 at 8 p. m. The program will consist of two papers: "Treatment of Infections with Aureomycin," by Dr. Wendell H. Hall, Minneapolis, and "Thoracic Sarcoidosis," by Dr. Wayne S. Hagen, Minneapolis. All physicians are invited to attend.

NEW YORK

Experimental Cerebral Palsy School.—Courses in speech, physical development and academic work started September 12 in the Ramapo Central High School in Suffern for 8 Rockland children with cerebral palsy. Seven more pupils were expected to attend. Transportation and costs are being covered by state aid and funds raised by the Rockland County Palsy Society. There are said to be 17,000 persons up to 21 years of age with cerebral palsy in the state of New York. The experimental school in Suffern will set the pattern followed in a statewide movement to give aid in rural and suburban areas.

New York City

Endow Professorship of Surgery.—Dean Jacob A. W. Hetrick, of the New York Medical College, Flower and Fifth Avenue Hospitals, announces that, through a recent bequest of $500,000, the Valentine Professorship of Surgery has been established and that Dr. James M. Winfield, professor of surgery and director of the department of surgery, has been appointed to the new chair. The bequest was made through the generosity of the late Eliza and Samuel Valentine.

Appoint Professor of Ophthalmology.—Dr. Alson E. Braley has been appointed professor and chairman of the department of ophthalmology at Post-Graduate Medical School of the New York University-Bellevue Medical Center. Dr. Braley, an assistant clinical professor of ophthalmology at Columbia University College of Physicians and Surgeons, will direct the care of patients with eye diseases, teaching of ophthalmology to physicians on a graduate level and various research projects carried out on the Eye Service, Bellevue Hospital. Dr. Daniel B. Kirby, formerly chairman of the department of ophthalmology, remains on the faculty as professor of ophthalmology and an active participant in clinical teaching. During World War II Dr. Braley served in the U. S. Navy, he was discharged with the rank of commander (USNR).

Scholarship in Prosthetics to Aid Italian Children.—Columbia University has awarded a five month resident scholarship valued at $6,100 to Dr. Attilio Rampoldi, a specialist in physical medicine at the University of Rome for training in prosthetics. Cooperating with the university is the Columbian Civic Club of Newark, N. J., an organization composed of members of Italian descent. Appeals for assistance in training in physical medicine, orthopedic surgery and rehabilitation were made to Columbia University by the Foster Parents' Plan for War Children of New York City. About 15,000 Italian children are said to need medical assistance as a result of war injuries, and Italian doctors are not acquainted with new methods in orthopedic surgery and the proper use of artificial limbs. Dr. Rampoldi will study at the College of Physicians and Surgeons, New York Orthopaedic Dispensary and Hospital and other Columbia-affiliated hospitals.

OHIO

Graduate Course on Urinary Disorders.—The Frank E. Bunts Institute and the Cleveland Clinic will present a continuation course for physicians on "Medical and Surgical Disorders of the Urinary Tract" November 17-19. Dr. Herman L. Kretschmer of Chicago will give the evening address November 17 on "Clinical Significance of Hematuria"; Dr. Louis Leiter of New York will speak on "Uremia" Saturday morning and will take part in the panel discussion closing the course. Inquiries regarding the program and registration can be addressed to the Director of Education, Frank E. Bunts Educational Institute, 2020 East Ninety-third Street, Cleveland 6, Ohio.

Dr. Ogden to Head Department.—Dr. Eric Ogden has been appointed professor and chairman of the department of physiology of Ohio State University College of Medicine, Columbus, succeeding Fred A. Hitchcock, Ph.D., acting chairman since August 1947. Dr. Ogden comes to Ohio State from the University of Texas Medical Branch, Galveston, where he served in the same capacity. He was graduated in physiology from University College in England and took his medical training at the Royal College of Physicians, London. From 1929 to 1943 he was a member of the faculty of the University of California Medical School, San Francisco, also serving during that period as consultant for the University Hospital at San Francisco. Professor Ogden's research interest is in the cardiovascular and renal systems with special reference to hypertension.

PENNSYLVANIA

Chest Physicians Meeting.—The Pennsylvania Chapter of the American College of Chest Physicians will meet at Devitt's Camp, Allenwood, October 22. The following program has been arranged:

Elmer R. Hodil, Allenwood, Treatment of Pulmonary Tuberculosis with Pneumoperitoneum.

John S. Packard, Allenwood, Management of Tension Cavities in Tuberculosis.

Howard E. Stine, Allenwood, Treatment of Tuberculosis with Para-Aminosalicylic Acid.

William A. Lell, Philadelphia, Tuberculosis of Larynx with Cases Showing Response to Streptomycin Therapy (kodachrome® film).

Clarence E. Moore, Harrisburg, Mediastinal Tumors (film).

Stream Pollution Control.—A stream pollution control program is receiving great emphasis in Pennsylvania. The plan was adopted in 1944 by the State Sanitary Water Board. Streams were first classified on the basis of the degree of pollution, and some 1,200 notices were issued by the water board to municipalities and industries to provide for the treatment of sewage or industrial waste to the degree designated by the board. Plans being received are studied by the Bureau of Sanitary Engineering and permits are issued. The board has lately adopted a policy which contemplates the building of treatment plants within a period of two years from the time of notification in the two important drainage basins, the main Delaware River and its principal tributary, the Schuylkill River.

In the latter basin desilting systems have been installed in all of the 47 collieries in that area, resulting in the retention daily of thousands of tons of fine-size coal and other materials formerly dumped into the streams. The state is desilting the river of culm deposited there over perhaps one hundred years from the breakers and washeries at the anthracite coal mines at the headwaters. This clean-up job is of particular importance because of the great use made of the river for public and industrial water supplies. One of the outstanding projects is proceeding in Philadelphia, where it is expected that some $60,000,000 will be expended in the next few years in the collection and treatment of the city's sewage. The treatment will do much to relieve the Delaware and Schuylkill rivers of pollution. The New Jersey Department of Health is cooperating in requiring Camden and other communities in the Philadelphia area to provide sewage treatment of an equivalent degree to that of Philadelphia. A group of 30 municipalities downstream from Philadelphia are progressing in providing for collection and treatment of sewage in that area.

To solve the problem of virtually no sewage treatment in the Pittsburg-Allegheny County area, the Allegheny County Sanitary Authority was organized, and over the course of two years the problem of collection and treatment of sewage and industrial wastes for more than 100 separate municipalities has been studied. The estimated cost of this project is $82,000,000. It will require several years for completion. Research studies on the matter of acid mine drainage, for which a practical means of treatment is unknown, have been under way for three years at Mellon Institute, Pittsburgh. Other research projects include: (1) the study of practical methods of treating wastes from small slaughter houses, (2) a biologic study of Conestoga Creek in Lancaster County to determine the effect of pollutants on stream life and (3) a study of the Clarion River, heavily polluted with industrial wastes and municipal sewage, with a view to determining the needs in this case and means for procuring abatement.

Present work is based on a statute enacted in 1937. In 1945 the act was amended to tighten regulations concerning industrial wastes. An intensive publicity program concerning the work of the Sanitary Water Board has made the people of Pennsylvania pollution conscious. The board publishes quarterly an eight page bulletin, entitled "Clean Streams," which it distributes through the state and through which it announces the progress of the stream pollution program.

Philadelphia

Diabetic Society Wins Membership Contest.—The Philadelphia Diabetic Society won first place in the state membership contest for the greatest percentage of increase in membership in Senior Clubs for 1948-1949. The award was presented by the Pennsylvania Federation of Womens Clubs of Harrisburg.

Lectures on Mental Hygiene.—The Philadelphia County Medical Society is offering its sixth annual series of lectures on mental hygiene on Monday evenings at 8:15 at the Medical Society Building. All interested persons are invited. The remaining lectures are as follows:

Oct. 17, Frederick H. Allen, Philadelphia, Delinquency in the Adolescent Period; Mr. H. W. Jones, Atlantic Refining Company, An Employer's Experiences and Practice.

Oct. 24, Rev. Gerard Murphy, Jersey City, N. J., Religion in the Home as a Preventive of Delinquency; Stuart M. Finch, Philadelphia, Factors Contributing to Normal and Delinquent Personalities.

A period of questions and answers will follow each discussion.

Pittsburgh

Drs. Hammon and Kammer to Head Departments.—Dr. William M. Hammon, assistant director of the Hooper Foundation, San Francisco, has been appointed professor and head of the department of epidemiology at the Graduate School of Public Health, University of Pittsburgh, effective Feb. 1, 1950. In this position he will also be responsible for the instructional and research interests of the school in the field of microbiology. After finishing his medical course at Harvard Medical School, Boston, 1936, he completed there the work for the M.P.H. and Dr.P.H. degrees. He was instructor for one year at the Harvard School of Public Health and then went to the University of California Medical School, San Francisco, where he was successively lecturer, assistant professor, associate professor and professor of epidemiology at the George William Hooper Foundation. He has also served as lecturer in the University of California Schools of Medicine and Nursing. Dr. Hammon is president of the Society of American Bacteriologists; associate editor of the *Journal of Immunology* and a member of the Founders Group of the American Board of Preventive Medicine and Public Health as well as a member of other scientific societies.

Adolph G. Kammer, South Charleston, W. Va., has been appointed professor and head of the department of occupational health, effective October 1. Following graduation from the University of Pennsylvania School of Medicine, Philadelphia, 1928, Dr. Kammer practiced medicine in Belleville, Wis., for four years. He has been medical examiner for the Montreal Mining Company, Montreal, Wis.; medical director of the Inland Steel Company, East Chicago, Ind., and medical director of the Carbide and Carbon Chemicals Corporation at Oak Ridge, Tenn. (Manhattan Project). Since 1947 he has been general medical director of the Carbide and Carbon Chemicals Corporation, South Charleston, W. Va.

UTAH

State Society Appoints Supervisory Board.—The Utah State Medical Association at its recent meeting set up a supervisory board of five physicians to receive and investigate charges from the public or from other physicians that might reflect discredit on the association. Members of the board are: Drs. Clark L. Rich, Ogden; W. Ezra Cragun, Logan; Paul K. Edmunds, Cedar City; John G. McQuarrie, Richfield, and John C. Hubbard, Price. Dr. Earnest P. Mills has resigned as health officer of Weber County, Utah, and has accepted an appointment as medical officer at the U. S. Army General Depot at Ogden, Utah.

VERMONT

State Medical Election.—At the annual meeting of the House of Delegates of the Vermont State Medical Society held in September in Burlington, the following officers were elected: Drs. Hiram E. Upton, Burlington, president; Elbridge E. Johnston, St. Johnsbury, president-elect; James P. Hammond, Bennington, secretary, and David Marvin, Essex Junction, treasurer.

GENERAL

Meeting of Association of Medical Colleges.—The annual meeting of the Association of American Medical Colleges will be held in Colorado Springs November 7-9 under the presidency of Dr. J. Roscoe Miller, Evanston, Ill. Subjects to be discussed include social responsibility of medicine, education in diseases of the chest and films on medical education. Round table discussions will be held on student selection problems, leadership in curriculum planning and making the internship a planned education experience.

Meeting of Professors of Preventive Medicine.—The Conference of Professors of Preventive Medicine will convene October 24 at the Hotel Statler, New York. While the conference will be for those who teach hygiene, preventive medicine and public health to medical students in the medical schools of the United States and Canada, others interested in public health are invited to attend. Programs may be obtained from the chairman, Dr. Leland W. Parr, the George Washington University School of Medicine, Washington, D. C., and from the secretary, Dr. David Rutstein, professor of preventive medicine, Harvard Medical School, Boston.

Teachers for the Handicapped.—According to a joint survey by the U. S. Office of Education and the National Society for Crippled Children and Adults, it is estimated there are 4,000,000 children in this country in the special education category: the blind, or those with partial sight, the deaf or those with defective hearing, the crippled, the cerebral palsied, epileptic children, children with speech handicaps, emotionally maladjusted children and those either mentally deficient or superior. The survey showed that 175 colleges and universities now offer courses to help prepare qualified teaching personnel for special education as compared to 43 in 1929 and 101 in 1936. There is still a critical need not only for more teachers but for greater study and coordination by educational authorities and institutions.

Dr. Waine Appointed Medical Director—Dr. Hans Waine, who in recent years has been engaged in research, teaching and practice in the field of rheumatic disease in Massachusetts and California, has been appointed medical director of the New England Chapter of the Arthritis and Rheumatism Foundation with headquarters at 201 Devonshire street, Boston. Dr. Waine will direct activities of the foundation in Massachusetts, Maine, New Hampshire and Vermont in a program including increased medical and lay knowledge of rheumatic diseases, research, and establishment of increased clinical facilities for the diagnosis and treatment of arthritis and other crippling ailments. A native of Germany, Dr. Waine in 1933 came to the United States to study medicine at Columbia and at Harvard Medical School, Boston, where in 1937 he received his M.D. degree. He became a research and teaching fellow at Harvard and for two years was associated with the Lovett Fund Arthritis Clinic at Massachusetts General Hospital. For seven years prior to his appointment as medical director of the Arthritis and Rheumatism Foundation in New England, Dr. Waine was on the faculty of the University of California Hospital, San Francisco, and was also engaged in private practice in rheumatic diseases in San Francisco.

Institute for Research in Pediatrics.—The formation of the Playtex Park Research Institute, for research in pediatrics, was announced September 14 by Walter O. Heinze, president of International Latex Corp., Dover, Del., following its first meeting in New York, which was attended by leading pediatricians and medical researchers of children's hospitals and institutions throughout the country and governmental health agency representatives. The institute's program will be supported entirely by the International Latex Corporation. Its objectives are, "The facilitation and coordination of scientific research concerning the nature, prevention, causes, treatment and cure of diseases and disorders, and the factors responsible for normal growth and development in the infant." Its funds will not be used for buildings or equipment but for accelerating and initiating research in existing publicly or privately endowed institutions. The governing board will be relied on in the allocation of funds and to monitor the projects sponsored. Members of the governing board of the institute are Drs. Katherine Baine, U. S. Children's Bureau, Washington, D. C.; Sidney Farber, Children's Medical Center, Boston; John P. Hubbard, Philadelphia, American Academy of Pediatrics; Charles A. Janeway, Children's Hospital, Boston; Eva Landsberg, New York City Department of Health; Milton I. Levine and Samuel Z. Levine, New York Hospital; Charles F. McKhann Jr., University Hospital of Cleveland; Henry G. Poncher, University of Illinois College of Medicine, Chicago; Bret Ratner, New York Medical College; Milton J. E. Senn, Yale University Child Study Center, New Haven, Conn.; Joseph Stokes Jr., Children's Hospital, Philadelphia; Ashley A. Weech, Cincinnati General Hospital; Myron E. Wegman, Louisiana State University School of Medicine, New Orleans, and James L. Wilson, University of Michigan Medical School, Ann Arbor.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

Division and State	Week Ended			Jan. 1 to	
	Oct. 1, 1949	Oct. 2, 1948	Median, 1944-1948	Oct. 1, 1949	Oct. 2, 1948
New England States					
Maine	17	3	2	399	34
New Hampshire	16	2	2	176	18
Vermont	15	2	2	107	19
Massachusetts	82	13	28	1,466	151
Rhode Island	11	1	3	118	6
Connecticut	40	10	10	462	90
Middle Atlantic States					
New York	287	138	117	4,378	1,053
New Jersey	65	52	47	1,091	575
Pennsylvania	47	45	45	594	549
East North Central States					
Ohio	105	83	63	1,446	908
Indiana	36	20	18	892	316
Illinois	113	98	71	2,439	807
Michigan	134	51	51	2,289*	512
Wisconsin	68	44	44	817	368
West North Central States					
Minnesota	89	72	32	1,567	861
Iowa	56	93	23	932	751
Missouri	27	32	19	1,134	241
North Dakota	5	3	1	420	97
South Dakota	25	42	6	314	223
Nebraska	41	48	8	483	527
Kansas	21	16	8	598	243
South Atlantic States					
Delaware	..	5	5	38	119
Maryland	13	8	8	162*	67
District of Columbia	8	7	7	78	99
Virginia	13	37	23	263	452
West Virginia	7	7	7	299	128
North Carolina	14	74	18	194	2,241
South Carolina	5	13	2	91	322
Georgia	13	12	3	160	191
Florida	8	15	7	202	216
East South Central States					
Kentucky	33	5	5	506	158
Tennessee	13	18	12	433	307
Alabama	8	9	4	204	176
Mississippi	10	9	9	279	137
West South Central States					
Arkansas	25	4	4	870	123
Louisiana	7	10	4	201	116
Oklahoma	40	17	6	1,090	321
Texas	67	35	28	1,943	1,490
Mountain States					
Montana	12	2	5	75	51
Idaho	16	1	2	376	94
Wyoming	7	2	2	97	67
Colorado	36	13	4	528	95
New Mexico	7	1	1	149	61
Arizona	9	5	2	133	111
Utah	14	6	6	184	66
Nevada	..	1	..	11	4
Pacific States					
Washington	36	31	13	461	208
Oregon	17	6	5	180	116
California	117	307	52	1,805	3,289
Total	1,855	1,528	...	33,144*	19,174
Median, 1944-1948			976	14,546	

* Current corrections made in cumulative totals: Michigan, deduct 1 case week ended August 19, 1 case week ended September 9; Maryland, add 2 cases August onset.

Marriages

Paul Vernon Nolan, Marshall, N. C., to Miss Anne Lewis of St. Petersburg, Fla., July 2.

Jacob L. Gluchoff, Bloomsburg, Pa., to Miss Mary Kalish of Bridgeton, N. J., June 26.

John Patrick Buckley, Merced, Calif., to Miss Catherine Carlsen in Chicago, July 27.

David Robinson to Miss Irene Clare Edelson, both of New York, June 19.

Walter Pinkus to Miss Lois Ferdinand, both of Chicago, June 26.

Deaths

Frederic Augustus Washburn ⊕ Boston; born in New Bedford, Mass., Nov. 22, 1869; Harvard Medical School, Boston, 1896; veteran of the Spanish-American War; commanded Base Hospital No. 6 in the American Expeditionary Forces in France in 1917; in charge of hospitalization in the American hospitals in Great Britain and chief surgeon of Base Section 3, American Expeditionary Forces in London from October 1918 to March 1919; was decorated by the American and British governments; member of the House of Delegates of the American Medical Association in 1912 and member of the Council on Medical Education and Hospitals from 1932 to 1938; in 1912-1913 president of the American Hospital Association, which in 1941 presented him with the award of merit; member of the American College of Hospital Administrators; assistant director, 1898-1899 and from 1903 to 1908, director from 1908 to 1934 and since 1934 director emeritus at the Massachusetts General Hospital; director of the Massachusetts Eye and Ear Infirmary from 1915 to 1934; commissioner of institutions, city of Boston from 1934 to 1937; director of the Cambridge (Mass.) Hospital from 1937 to 1940 and later consulting director; trustee from 1923 to 1938 and chairman at the Gardner (Mass.) State Hospital; past president of the Medical Superintendents Club; from 1923 to 1927 governor of the Massachusetts Society of Mayflower Descendants; commander of the Greater Boston Chapter of the Military Order of the World War, 1923-1924; died August 20, aged 79, of coronary sclerosis.

Clyde Elliott McDannald ⊕ New York; born in Warm Springs, Va., March 27, 1876; University College of Medicine, Richmond, 1898; formerly professor of ophthalmology, New York Polyclinic Medical School and Hospital; instructor in ophthalmology, Bellevue Hospital Medical College, from 1915 to 1919; specialist certified by the American Board of Ophthalmology; fellow of the American College of Surgeons and the New York Academy of Medicine; member of the American Academy of Ophthalmology and Otolaryngology; served as a member of the medical examining board of the Selective Service of the U. S. Army during World War I; affiliated with the New York Eye and Ear Infirmary, New York Hospital, Park East Hospital and the New York Polyclinic Hospital; consulting ophthalmologist to the New York Central Railroad and the Fifth Avenue Coach Company; died August 13, aged 73, of coronary thrombosis.

Thomas Edward De Gurse ⊕ Marine City, Mich.; Detroit College of Medicine, 1895; member of the American Association of Industrial Physicians and Surgeons; served as councilor of the Seventh District of the Michigan State Medical Society; past president of St. Clair County Medical Society; at one time an acting assistant surgeon of the U. S. Public Health Service; veteran of the Spanish-American War; nine times mayor; served as health officer of Marine City and county health officer; in 1948 was chosen "Michigan's foremost family physician" by the state medical association; served on the staffs of St. Joseph's Hospital in Mount Clemens and Port Huron (Mich.) General Hospital; died August 15, aged 76, of cerebral hemorrhage and coronary embolism.

Charles Locke Scudder, Brookline, Mass.; Harvard Medical School, Boston, 1888; formerly on the faculty of Harvard Medical School and the graduate school; member of the founders group of the American Board of Surgery; member of the American Surgical Association, American Medical Association, Society of Clinical Surgery and the New England Surgical Society; fellow of the American College of Surgeons; affiliated with the Massachusetts General Hospital, Boston; author of eleven volumes on "Treatment of Fractures"; died August 19, aged 89, of leukemia.

Albert Bertram Allen, Mount Clemens, Mich.; College of Physicians and Surgeons, Baltimore, 1895; died July 5, aged 75, of coronary thrombosis.

William McKinley Allen, Chicago; State University of Iowa College of Medicine, Iowa City, 1928; died August 13, aged 51, of chronic myocarditis.

William Wallace Andrews, Kansas City, Kan.; Howard University College of Medicine, Washington, D. C., 1929; member of the American Medical Association; assistant county physician; formerly deputy coroner; served during World War II; affiliated with the Wheatley Provident Hospital, Kansas City, Mo., and the Douglass Hospital, where he died July 20, aged 45, of cerebral hemorrhage.

Linus Worthington Bagg, Basking Ridge, N. J.; Syracuse University College of Medicine, 1906; member of the American Medical Association; fellow of the American College of Surgeons; on the senior staff of the Presbyterian Hospital in Newark, where he died August 5, aged 68, of myelogenous leukemia.

Julius Edward Beck, Mobile, Ala.; University of Alabama School of Medicine, 1912; member of the American Medical Association; died in the Colonial Hospital, Rochester, Minn., August 7, aged 71.

Chester Herbert Bowers, Beverly Hills, Calif.; College of Physicians and Surgeons, Los Angeles, 1913; served as president of the Pacific Coast Oto-Ophthalmological Society; affiliated with the Hospital of the Good Samaritan, Cedars of Lebanon Hospital, Children's Hospital, Los Angeles County Hospital and St. Vincent's Hospital, all in Los Angeles; died August 12, aged 62, of coronary thrombosis.

William Baldwin Bowers, Lincoln, Neb.; Northwestern University Medical School, Chicago, 1909; formerly company physician for Swift and Company in Chicago; died August 21, aged 72.

John Henry Breyer ⊕ Pasadena, Calif.; Rush Medical College, Chicago, 1909; member of the founders group of the American Board of Surgery; member of the Western Surgical Association; fellow of the American College of Surgeons; served during World War I; on the staff of the Huntington Memorial Hospital; died August 10, aged 65, of coronary occlusion.

Harley Gaskill Brookshire Jr., Asheville, N. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1940; member of the American Medical Association; served during World War II; formerly city school physician; affiliated with Biltmore Hospital, St. Joseph's Hospital and Aston Park Hospital, where he died August 6, aged 37, of aneurysm.

Charles Kellogg Burt, Lake George, N. Y.; Medico-Chirurgical College of Philadelphia, 1893; member of the American Medical Association; health officer of the town of Caldwell and the village of Lake George; died July 24, aged 83.

William A. Campbell, Belington, W. Va.; Baltimore Medical College, 1895; died August 20, aged 85, of carcinoma of the prostate and bronchopneumonia.

James Theodore Canady, Portsmouth, Va.; Howard University College of Medicine, Washington, D. C., 1925; city physician; served on the staff of the Norfolk (Va.) Community Hospital, where he died July 6, aged 48, of diabetes mellitus.

Carmi Miles Cantrell ⊕ Iowa City, Iowa; State University of Iowa College of Medicine, Iowa City, 1924; served in France during World War I; resident in radiology at the University Hospitals; on the staff of the Mercy Hospital; died August 2, aged 54, of coronary occlusion.

Thomas Alfred Cheatham, Birmingham, Ala.; Jefferson Medical College of Philadelphia, 1909; also a graduate in pharmacy; died August 12, aged 67.

Rudolph Emil Christiansen, Superior, Wis.; Marquette University School of Medicine, Milwaukee, 1937; past president of the Douglas County Medical Society; member of the American Medical Association; served overseas during World War II; affiliated with St. Francis, St. Joseph's and St. Mary's hospitals; died August 2, aged 43, of coronary heart disease.

Alger Arthur Clark, Des Plaines, Ill.; University of Illinois College of Medicine, Chicago, 1916; member of the American Medical Association; died August 1, aged 58.

James Robert Coffee, Amarillo, Texas; Johns Hopkins University School of Medicine, Baltimore, 1949; intern at the Albert Merritt Billings Hospital, Chicago, where he died August 13, aged 21, of acute pulmonary edema and ulcerative colitis.

Benjamin F. Coffin, Kansas City, Kan.; Medico-Chirurgical College of Kansas City, Mo., 1902; member of the American Medical Association; died in Bethany Hospital recently, aged 71, of auricular fibrillation.

Harold Adolphus Collins ⊕ New York; Tufts College Medical School, Boston, 1930; affiliated with the Harlem Hospital; died in the Mary Immaculate Hospital, Jamaica, N. Y., June 24, aged 56, of cerebral hemorrhage.

Homer Collins ⊕ Duluth, Minn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1884; an Associate Fellow of the American Medical Association; served on the staff of St. Mary's Hospital, where he died July 31, aged 90, of arteriosclerosis.

Frank Harold Crispell, Poughkeepsie, N. Y.; Eclectic Medical College, Cincinnati, 1924; member of the American Medical Association; served during World War II; on the staff of the Vassar Brothers Hospital; died August 21, aged 54, of myocardial failure and bronchopneumonia.

Guy Maynard Cushing, Pasadena, Calif.; the Hahnemann Medical College and Hospital, Chicago, 1900; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; associate clinical professor of surgery at the College of Medical Evangelists in Los Angeles; member of the staff of St. Luke Hospital; at one time practiced in Chicago, where he was on the staff of Cook County Hospital; died August 11, aged 71, of coronary disease.

George Reger Cutting, San Francisco; University of Buffalo School of Medicine, 1902; died in St. Francis Hospital, recently, aged 70, of coronary thrombosis.

Oscar Lafayette Dodds, Rutherford, Tenn.; University of Nashville Medical Department, 1905; served as medical officer with the Indian Service; died July 28, aged 76, of pneumonia.

Charles E. Donnell, Plainview, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; member of the American Medical Association; died July 21, aged 73.

John Beasley Driver ⊕ Dallas, Texas; Baylor University College of Medicine, Dallas, 1926; clinical assistant professor of proctology at the Southwestern Medical College; affiliated with the Parkland and Gaston hospitals; died July 25, aged 52.

William Campbell Emery ⊕ Boston; Harvard Medical School, Boston, 1909; affiliated with the Harley Hospital; died August 20, aged 75, of cerebral hemorrhage.

Charles Mackall Fisher ⊕ Brooklyn; University of Pennsylvania Department of Medicine, Philadelphia, 1905; past president of the Bay Ridge Medical Society; affiliated with the Victory Memorial Hospital and the Norwegian Lutheran Deaconess' Home and Hospital, where he died August 21, aged 72, of cerebral hemorrhage.

Frederick Wortman Fletcher, Sanford, Fla.; Baltimore University School of Medicine, 1900; died August 7, aged 73, of coronary thrombosis and coronary sclerosis.

Samuel Green, Atlanta, Ga.; Eclectic Medical College, Cincinnati, 1912; member of the American Medical Association; died August 17, aged 59, of coronary occlusion.

John Charles Griffith, Bushnell, Ill.; Rush Medical College, Chicago, 1896; served during World War I; died August 10, aged 77, of coronary thrombosis.

George W. Grossnickle, Elkhart, Ind.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1909; member of the American Medical Association; died July 27, aged 69, of acute coronary occlusion.

William Huard Hargis Jr., San Antonio, Texas; University of Texas School of Medicine, Galveston, 1936; specialist certified by the American Board of Internal Medicine; a fellow in medicine at the Mayo Foundation in Rochester, Minn., from October 1937 until November 1940; member of the American Medical Association; served during World War II; on the staff of the Robert B. Green Memorial Hospital; died August 15, aged 36, of poliomyelitis.

Carl Alfred Hettesheimer ⊕ Hempstead, N. Y.; University of Buffalo School of Medicine, 1925; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; served on the staffs of the North Country Community Hospital, Glen Cove, Nassau Hospital, Mineola, Mercy and South Nassau Communities Hospital, Rockville Centre, Doctors Hospital, New York, Nassau County Sanatorium in Farmingdale and the Meadowbrook Hospital; died August 10, aged 49, of an injury to his back and pneumonia.

Edmond Arthur Holberg, Chicago; Northwestern University Medical School, Chicago, 1907; member of the American Medical Association; member of the staff of the Norwegian American Hospital, where he died August 4, aged 66.

Nathaniel Benjamin Lans, Chicago; University of Illinois College of Medicine, Chicago, 1924; member of the American Medical Association; served during World War I; on the staff of Grant Hospital, where he died August 7, aged 56, of coronary occlusion.

Philip H. McKeon, New Richmond, Wis.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1895; served as health officer; died August 17, aged 86.

John Roddy Mahan, New Haven, Conn.; Albany (N. Y.) Medical College, 1894; died July 19, aged 78.

Milton Marcou, Brooklyn; Long Island College Hospital, Brooklyn, 1925; died in August, aged 46.

Joseph Edward Marek, Mason City, Iowa; University of Georgia Medical Department, Augusta, 1908; member of the American Medical Association; served as secretary of the Cerro Gordo County Medical Society; affiliated with St. Joseph's Mercy Hospital, where he died August 10, aged 64, of Parkinson's disease.

David Meeker Marvin, New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; member of the American Medical Association; died in St. Luke's Hospital August 22, aged 84.

Chester John Mellies, Sikeston, Mo.; St. Louis University School of Medicine, 1933; member of the American Medical Association and the American College of Chest Physicians; fellow of the American College of Surgeons; served overseas during World War II; died August 12, aged 43, of carcinoma of the liver with metastases.

Tempest C. Miller, Abbottstown, Pa.; University of Maryland School of Medicine, Baltimore, 1889; president of the local bank, local water company and local fire company; member of the American Medical Association; affiliated with the Annie M. Warner Hospital, Gettysburg, where he died August 4, aged 84, of coronary occlusion.

John Ellis Mitchell ⊕ Sedalia, Mo.; Missouri Medical College, St. Louis, 1898; Washington University School of Medicine, St. Louis, 1898; past president of the Pettis County Medical Society; affiliated with the John H. Bothwell Memorial Hospital; died August 2, aged 77, of heart disease.

Joseph A. Murray ⊕ Bayonne, N. J.; Georgetown University School of Medicine, Washington, D. C., 1924; affiliated with the Margaret Hague Memorial Hospital in Jersey City and the Bayonne Hospital; died in Avon, August 6, aged 49, of coronary occlusion.

Alois Pollak ⊕ Los Angeles; Leopold Franzens-Universität Medizinische Fakultät, Innsbruck, Austria, 1926; fellow of the American College of Surgeons; instructor in surgery at the College of Medical Evangelists; affiliated with the Cedars of Lebanon Hospital and the French Hospital; died July 17, aged 47, of coronary occlusion.

Frank C. Sauerbry, Arlington, Iowa; State University of Iowa College of Medicine, Iowa City, 1904; affiliated with the Mercy Hospital in Oelwein; member of the school board; died July 25, aged 71, of coronary occlusion.

John Joseph Seibel ⊕ Reedley, Calif.; University of Minnesota Medical School, Minneapolis, 1920; died in Minot, N. D., July 22, aged 59.

William Udell, Philadelphia; Medico-Chirurgical College of Philadelphia, 1909; died in the Northern Liberties Hospital, July 29, aged 71, of carcinomatosis.

John Rudolph Vahlteich, Chicago; Rush Medical College, Chicago, 1899; member of the American Medical Association; died July 9, aged 84, of coronary thrombosis.

Edwin Wayte, Whittier, Calif., Hahnemann Medical College and Hospital of Philadelphia, 1899; member of the American Medical Association; served as superintendent of the Patton (Calif.) Hospital and the Norwalk (Calif.) State Hospital; died August 11, aged 74.

George Albert Weaver ⊕ Bradford, Vt.; Yale University School of Medicine, New Haven, Conn., 1897; member of the New Hampshire Medical Society; past secretary-treasurer and president of the Grafton County (N. H.) Medical Society; health officer of Bradford; served as town treasurer of Warren, N. H., where he was on the school board; formerly a member of the board of pension examiners in Grafton County, N. H.; died recently, aged 80, of coronary arteriosclerosis.

Robert Edward Westmoreland ⊕ Indianapolis; University of Virginia Department of Medicine, Charlottesville, 1932; certified by the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; served during World War II; affiliated with the Veterans Administration Hospital; assistant in medicine at the Indiana University School of Medicine; on the staff of the Indianapolis General Hospital; died in the Mayo Clinic, Rochester, Minn., recently, aged 40, of chronic pericarditis.

Frederick James Wort, Newark, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; member of the American Medical Association; affiliated with the Essex County Overbrook Hospital, Cedar Grove and the Newark Eye and Ear Infirmary; died in Presbyterian Hospital, July 29, aged 67, of carcinoma of the intestine.

Foreign Letters

ITALY

(From Our Regular Correspondent)

FLORENCE, Aug. 30, 1949.

"Roentgenologic Appendicopathy"

At a meeting of the Neapolitan Surgical Association Dr. Pandolfi considered the problem of "roentgenologic appendicopathy," from the point of view whether such appendicopathies require surgical intervention. His conclusions were as follows: 1. The appendixes which are definitely healthy should not be operated on. 2. In all cases of acute appendicitis, with the exception of those with grave contraindications, operation should be done preferably within forty-eight hours of onset. 3. Chronic appendicitis confirmed clinically and roentgenologically necessitates immediate operation because of the ever present danger of grave complications. 4. The so-called nonorganic, roentgenologically proved appendicopathies should not be operated on. As a measure of caution the speaker recommended that in cases of this type the roentgenologic examination be repeated after a preceding intramuscular injection of 1 mg. of atropine sulfate. 5. The so-called organic, roentgenologically proved appendicopathies should be operated on at once, as should appendicitis complicated by colitis, pericolitis or cholecystitis, because there is always the danger of severe complications. On excision one may find the entire appendix cicatrized. 6. A normal appendix may be demonstrated in those cases in which the roentgenologic examination does not verify the clinical suspicion; in such cases one may delay the intervention, but one should continue to watch the patient vigilantly.

Professor D'Istria defined the term appendicopathy as descriptive of only the conditions in which the appendicular lumen has not been demonstrated as permeable by the contrast medium and in which a circumscribed lesion may be observed on the internal contour of the cecum, particularly if there are also present other secondary signs, such as a spasm of the cecum or ileocecal stasis. He stated that the term appendicopathy may be used in the presence of associated disturbances of other neighboring organs, such as colitis, terminal ileitis and adnexitis.

When the appendix is visualized, permitting the study of its filling up, structure, emptying and mobility, the roentgenologic examination may aid in determining the type of appendicopathy present.

Professor Cantelmo called attention to the clinical element, which should always be given preponderance in the diagnosis of these lesions.

Professor Radice believes that one must always associate the results of the roentgenologic examination with the clinical observations. He does not believe that one should speak of exclusively roentgenologically proved appendicopathies. The surgical indication should arise from the combined examinations. The surgeon may delay intervention when on examination the acute aspect of the condition seems to have subsided.

Penicillin Therapy of Progressive Paralysis

Professor Telatin reported to the Academy of Science of Ferrara the results of penicillin therapy in 6 cases of progressive paralysis. The total dose in every case was 3,000,000 units, administered within seven days, with an initial daily dose of 100,000 units and progressive increases until a final daily dose of 800,000 units is given every three hours. While only poor results were obtained in the 3 cases of chronic paralysis, a complete remission of the symptoms was observed in the 3 cases of acute disease. Results were particularly interesting in a case with severe mental confusion, pronounced psychomotor agitation, rise of temperature and a fairly severe toxic state. Highly satisfactory results were obtained by treatment with penicillin, and this treatment was followed by specific therapy without pyretotherapy.

Another patient was in a classic state of maniacal excitement, diagnosed as such during the first days, but soon the dysarthria and the delirious ideas of grandeur (megalomania) induced a revised diagnosis. The treatment with penicillin may be combined in a second course with pyretotherapy, but only after the patient shows definite improvement.

The speaker stated that the definite difference between the results obtained in acute and chronic paralysis is due to the differences in the anatomicopathologic lesions, which have a predominantly inflammatory character and are therefore presumably reversible in acute conditions, while they are of degenerative character and therefore presumably irreversible in chronic conditions.

Asthenic Pneumonia

Prof. L. Fontana of Ravenna discussed before the Medicosurgical Society of the Romagna the asthenic pneumonias and their treatment with antibiotics. He emphasized that the progress made in diagnostic technics by means of the ex adjuvantibus criterion has rendered rapid diagnosis more necessary in order that one might institute in time treatment which may be life saving.

A typical example is offered by so-called asthenic pneumonia, frequently occurring in old and in weak and debilitated persons. The diagnosis in these types is often difficult, for occasionally the initial clinical picture is one of severe cardiac insufficiency. In cases other than those of latent asthenic pneumonia, there may be a toxicoinfectious factor in the pathogenesis of the syndrome which at first may not be clearly demonstrated but only suspected.

In all these circumstances, the "early suspicion" assumes much more practical importance than early establishment of a diagnosis, because in the phase of suspicion one may proceed with any examination or test and even with life-saving methods of treatment, even though the results of the examination may not be certain. Thus, according to the speaker, the fundamental problem of early diagnosis is "early suspicion"; the suspicion is the true buttress of the entire diagnostic proceedings which then develop almost automatically.

THE NETHERLANDS

(From Our Regular Correspondent)

Aug. 23, 1949.

International Course in Blood Grouping

Seventy representatives of nine nations attended a seven day theoretical and practical course in blood grouping in Amsterdam, especially organized for them by the Netherlands Foundation for the Investigation of the Rhesus Factor. The lectures were given in French by Dutch and foreign specialists. The majority of the participants came from Italy, Spain, Portugal, Switzerland, Belgium and France. Drs. Mourant (London), Buhot (Paris), Hubinout (Brussels) and Morganti (Milan) collaborated as guest lecturers. The Lord-Mayor of Amsterdam entertained the foreign doctors at an evening reception in the Municipal Museum. On the last day of the course, three Dakota planes took the participants to the School for Midwives at Heerlen (200 miles from Amsterdam) in time to attend an exchange transfusion after delivery by cesarian section.

Dr. J. J. Van Loghem Jr., head of the Rhesus Laboratory of the Netherlands Red Cross Society in Amsterdam, was responsible for organization of the course. Because of the scientific and coordinating activities of this institution, Holland occupies an outstanding position with respect to application of the new knowledge about the Rhesus factor. Since 1947 more than two hundred exchange transfusions in newborn infants have been performed.

Human Infection with Leptospira Ballum

J. W. Wolff, H. Bohlander and A. C. Ruys (Amsterdam) described an accidental infection caused by Leptospira ballum, which developed in one of them (Professor Ruys) after he had received a superficial scratch on a finger while handling a white mouse. The animal belonged to a batch of mice in which a strain of Spirillum which cause rat-bite fever was kept. Further investigation revealed that of 30 apparently healthy adult mice from the stock breeding in the Municipal Laboratory 28 showed Leptospira organisms in the urine. The illness started acutely with fever and a severe headache, and gradually many joints became painful. A slight conjunctival infection and herpes labialis were also noticed. Jaundice or rigidness of the neck were not observed, but the patient suffered from severe dizziness. After five days the fever began to abate; the headache gradually subsided in three weeks. The specific, high agglutination titer, which had developed from 1:10 to 1:3,000 during the course of the disease, made possible a diagnosis.

Lept. ballum was described in 1943 by Borg Petersen (Denmark), who found this species in a rural house mouse. His strain proved to be identical with a Leptospira detected in 1941 by Schuffner and Bohlander (Amsterdam) in the peritoneal fluid and urine of a white mouse from the stock of the Tropical Laboratory. The stock of an Amsterdam dealer in white mice also proved to be infected. Wolff found that the virulence of Lept. ballum for mice is low but that in the long run nearly all infected animals become urinary carriers. This carrier state seems to remain during the lifetime of the mouse without impairing its health. Mice from a Lept. ballum-positive colony proved to have no immunity from infection with virulent Leptospira icterohaemorrhagiae but generally remained alive and became carriers of Lept. icterochaemorrhagiae, while Lept. ballum could not be detected any more in the urine of these mice.

Tracing Bacterial Antagonists in Surface Water

For tracing bacterial antagonists K. H. Gan and R. Gispen (Batavia) use a Petri dish, the bottom of which is perforated by thirteen round holes (5 mm. diameter). They place this dish with the perforated bottom on a sterile glass plate, and melted broth agar is then poured to a thickness of 3 mm. The antagonists are each inoculated on the surface of one of the small round agar spots which are found on the outside of the bottom of the dish. After an incubation of twenty-four hours at 37 C. the agar surface on the inside of the perforated dish is inoculated with the test bacterium. A strain with an antagonistic effect on the test bacterium will produce a zone of inhibition above its hole.

In 112 comparative examinations with the perforated Petri dish of the authors, the method of Stokes and Woodward (1942) and the broth culture method, twenty-five antagonists for Staphylococcus aureus were found with the method of the authors and three with each of the other two. Preliminary research for antagonists against typhoid bacilli in the badly infected surface water of the Tjiliwong River in Batavia yielded negative results. Antagonists against dysentery bacilli, which are not found in the Tjiliwong River, were readily obtained.

Psittacosis in Pigeons in Holland

From the results of a large series of complement fixation tests, F. Dekking (Amsterdam) concluded that psittacosis (ornithosis) is a disease widespread among pigeons in Holland. J. Winsser (Leyden) succeeded in isolating the virus from pigeons for the first time in Holland. Dekking found the complement fixation titer to be 1:60 in mice inoculated by Winsser intracerebrally and intraperitoneally with the Dutch pigeon virus. An antigen prepared from the lungs of intranasally inoculated mice showed a complement fixation titer of 1:16 in serum from a case of lymphogranuloma.

OSLO

(From Our Regular Correspondent)

Sept. 7, 1949.

New Chair of Social Medicine

The Scandinavian countries are creating chairs of social medicine. In the Scandinavian medical journal, *Nordisk Medicin,* July 22, 1949, much space is devoted to papers on this subject by representatives of Denmark, Finland, Norway and Sweden. The Norwegian representative, Dr. Axel Ström, professor of hygiene at the University of Oslo, points out that the proposal for creating a chair of social medicine is now being dealt with by the Medical Faculty. How, Professor Ström asks, is the teaching of hygiene and that of social medicine to be arranged so as to avoid overlapping? He suggests that the professors draw up "a gentlemen's agreement" based on friendly cooperation.

Shortage of Hospitals for Patients with Mental Diseases

The shortage of hospital beds for patients with mental disease in Norway has become acute. Our asylums contain 10 per cent more patients than they are supposed to, and, of the more than 14,000 insane persons under the care of public health authorities, only about one-half can be assigned to asylum beds. The remainder must be accommodated elsewhere; some of these persons have never been under observation in a mental hospital.

In a recent lecture at a meeting of the Norwegian Hospital Association, Dr. Björn Bakke pointed out that we still need some 3,600 asylum beds. At present about 50 per cent of all hospital beds in the country are occupied by patients requiring psychiatric service. Since 1902, only one new asylum has been built by the state, and now, after World War II, the prospect of new construction is formidable. Beds for patients with the milder forms of mental disease, who are not certifiable as insane, are needed as much as asylum beds. While Switzerland has about twenty-seven hospitals and sanatoriums for the "nervous," Norway has practically none. It is tragic when a psychiatrist who has twenty beds at his disposal for the "nervous" in Oslo begs his colleagues not to announce this fact or he may be forced to refuse even more applications for admission.

Newspaper Reporters and Hospital Patients

The senior medical officer of a large public hospital in the south of Norway has lately asked his patients the following questions: (1) Should the newspapers be informed when the victim of an accident is admitted to hospital? (2) Should the hospital let the newspapers know the character of the injuries inflicted? (3) Should the newspapers be told whether the patient's condition is satisfactory or bad? (4) Should the newspapers be given a forecast of the patient's ultimate fate? The answers revealed an overwhelming majority of the patients were in favor of withholding such information. In answer to question 4, nine patients replied "yes" and 205 "no." Most of the patients (180 as against 34) were in favor of the hospital's not even letting the newspapers know that an injured patient had been admitted.

Two more or less opposite reactions have followed this inquiry. Hospital authorities have adopted a more reserved attitude toward newspaper reporters, and the lay press has responded by a carefully worded protest against the suppression of news of general interest to the public. The large public hospital in Drammen has imposed on its doctors and nurses absolute silence with regard to the condition of victims of ordinary accidents. The hospital's senior medical officer will henceforth alone be responsible for the issuance of news to the lay press. This attitude of the hospital staff has been encouraged by the tactlessness of a few newspaper reporters. It has been suggested that reporters should apply for information from the relatives of the patient and should be certain that the latter desire publicity on such information. On the other hand, a representative of the Norwegian Press Association has pointed out that it must be simpler to centralize news about the victim of an accident in a newspaper than to let everyone interested in him make his or her own inquiries to the disturbance of the hospital staff.

Correspondence

FINANCING HOSPITAL CARE

To the Editor:—Let me compliment your editorial on "Financing of Hospitals" in The Journal, September 10. I should like to make one or two observations, not in criticism but by way of comment. Dr. J. F. Kimball and I originated the group plan of hospital care for the public. In many instances the plans have come into the hands of opportunists and have not been improved since originally formulated. The spread of cost of hospital care over a group is the best plan found thus far for this expense.

Thanks to good doctors, the cost for hospital care today is the lowest in the history of our nation. The percentage of the family income for hospital costs in major surgery is less today than it was forty years ago, or even twenty-five years ago when I first came into hospital management. Forty years ago, for major abdominal surgery the average stay in the hospital was thirty-four days; today for the same operation the average stay is between five and six days. For delivery of a baby the average was fifteen days; today it is four days. This is due to the advance in medical science, for which we are grateful. If the patient pays $25 a day, which would be an equitable charge for maternity care, he still gets his hospital bill for less money than he did twenty years ago. Twenty-five dollars per day for four days would be $100, and $6 per day twenty years ago for twenty days would be $120.

The American people get more for their money in a hospital than any other place on the American market. Their dollars go further and buy more in a hospital than any other place. For instance, if the patient is paying $12 per day for a private room in a hospital, he is only paying 50¢ per hour, because he gets twenty-four hour care—three 8 hour shifts of professional service. For this 50¢ per hour, he is bathed in bed, fed in bed and gets toilet service in bed, and by actual count the average patient is served 37 times in twenty-four hours in a hospital. Ninety per cent of those who serve the patient have spent from three to ten years preparing themselves for this service. In comparison, what can we buy in the commercial world for 50¢ an hour? A housewife cannot get her dishes washed for 50¢ an hour or get the lawn mowed. Occasionally, one hears someone say that he paid 20¢ for an aspirin tablet in a hospital, which is probably a great exaggeration, but, if he did, it is not the cost of the drug as much as it is the administering of the drug by one who knows how to carry out the doctor's orders. Today, to administer penicillin costs a hospital three times as much as the penicillin costs.

A large portion of the finance troubles of voluntary hospitals is due to the fact that the sick and those who care for the sick do not have grandeur. Men and women of wealth have put their money into such things as football stadiums, race tracks, fountains and statues. Many wealthy oil men think nothing of giving $30,000 for a white-faced bull, but ask them for $100 for a red-headed child and they have such a hard luck story that before they are through with you, you are about to pass the hat for them. What the American Medical Association and Hospital Association needs to do is to use the radio and our great publications to get the American public to return to putting first things first and quit majoring on minor things.

The public should remember the most sacred thing in life is life itself. No man I know of works as hard or disciplines himself as much as a practicing physician. I have served and worked with the medical profession for over twenty-five years, and they are the greatest men on earth. The average doctor charges less per hour for calling on a patient than a master plumber. It costs nine times as much to have your house painted by a union painter, if painted around the clock, than it does to stay in the finest room in the finest hospital in our city. The trouble is, people do not know how to judge values. A man will give $25,000 to have a criminal lawyer to defend him from the electric chair, where he should probably go, and yet a doctor can charge him $1,000 for saving his life and he will tell everybody in the county about it and refuse to pay the bill.

I am to speak to the Hospital Society of Kansas at Topeka in November. My subject will be "Why Every Hospital Administrator Should be Horse Whipped Twice Per Year." The reason is that we have the greatest cause to sponsor on earth. Next to saving a man spiritually is to save him physically, and yet we have men with dollars to spend on all kinds of schemes that we should channel into these great hospitals. We do nothing about it. You can close the doors of the university and no one will suffer, no one will die. The same is true of the public school, chamber of commerce, both the Y's and all other civic institutions; but lock the door of one of your local hospitals and many will suffer and some will die, even if it is closed for only one hour. And yet, we give much to these other institutions and take our hospitals for granted. People treat the hospital like the "old family horse": Everybody rides it and nobody feeds it.

Bryce L. Twitty, Administrator,
Hillcrest Memorial Hospital, Tulsa, Okla.

To the Editor:—The editorial of September 10 headed "Financing Of Hospital Care" refers to a nonprofit general hospital which reported an operating loss of almost a million dollars. If by "operating loss" is meant the difference between what it costs to render service to patients and what the patients pay for that service (including insurance payments on their behalf), one can find several hospitals in the country with losses exceeding one million dollars. The Mount Sinai Hospital, in fact, had an operating loss of $1,831,573 in 1947 and $1,679,679 in 1948. These losses are described by the hospital euphemistically as the "total philanthropic expenses for the year." Of course, this "philanthropic expense" was not entirely a drain on the hospital's own resources; it was reduced in large part by grants and subsidies from local welfare chests and the government, and by income from the hospital's own endowment fund. Neither of the foregoing figures takes into account what are referred to as "nonbudgetary" expenses for medical research, medical education, capital improvements and other items not considered as part of the maintenance costs of the hospital.

Joseph Turner, M.D.
Consultant to the Board of Trustees
Mount Sinai Hospital, New York.

OPERATIVE OR NONOPERATIVE PROCEDURES FOR UTERINE FIBROIDS

To the Editor:—In the September 10 number of THE JOURNAL, page 148, appears a communication from Dr. Frederick P. Bornstein, Perrin, Ill., in which he quotes only part of a sentence from my article and thereby gives an entirely misleading impression of my statement. Dr. Bornstein writes, "In this article Dr. Frank advocates supravaginal hysterectomy in the treatment of fibromyoma of the uterus, mainly because he never has seen carcinoma arising in the stump." My actual statement was, "I have never observed a stump carcinoma in any of my patients for whom I had performed a supravaginal hysterectomy." I further modify this statement by calling attention to the fact that I observe care in restoring a cervix to normalcy before operative intervention and that part of this immunity may also be due to the fact that my patients are predominately Jewish.

I can assure Dr. Bornstein that I have seen stump carcinoma. In fact, I first described a unique case of stump carcinoma of the cervix, with discontinuous metastasis into the vermiform appendix, as early as 1922 (Frank, R. T.: Cancer in Cervical Stump: Metastasis in Vermiform Appendix, Surg., Gynec. & Obst. **35**:334, 1922). Furthermore, in my book (Gynecological and Obstetrical Pathology, ed. 2, New York, D. Appleton & Company, 1931, p. 271) I postulate that, before a case should be considered as one of stump carcinoma, a year or more must have elapsed after the supravaginal hysterectomy. Nuttall and Todd suggested that two years after hysterectomy would be a fairer criterion, while Healy demands three years. That my experience of immunity is not unique can be seen by the report of Branscomb from the Howard Kelly Hospital in 1930 (Branscomb, L.: Occurrence of Cancer in Uterine Cervical Stump After Supravaginal Hysterectomy, Am. J. Obst. & Gynec. **20**:66, 1930). He reports 46 cases of stump carcinoma seen at the hospital (of which he excludes 16 cases because of the appearance of carcinoma within one year of the hysterectomy), not a single one of the patients having been operated on at their hospital.

Supravaginal versus complete hysterectomy is at present a much debated question. The master surgeon Victor Bonney, who certainly is an ardent and radical operator, in the last edition of Berkeley and Bonney (ed. 5, New York, Paul B. Hoeber, Inc. [Medical Book Department of Harper & Brothers], 1948, p. 225) agrees with me that under properly safeguarded conditions the cervix should be left in nonmalignant conditions of the uterus which are operated on. Te Linde (Operative Gynecology, Philadelphia, J. B. Lippincott Company, 1946, p. 283), in an estimate of total and subtotal hysterectomy for benign conditions of the uterus, states that he has observed 0.2 per cent cases of stump carcinoma and accepts Scheffey's follow-up studies as 0.9 per cent of cases of stump carcinoma as a fair estimate. Te Linde likewise draws attention to the fact that even radical operators frequently content themselves with supravaginal hysterectomy in benign conditions complicated by inflammation or other technical difficulties which make the total operation hazardous.

While I have given only passing attention to the question of total versus supravaginal hysterectomy in the article discussed by Dr. Bornstein, I have gone into greater detail in a recent article (Frank, R. T.: Mucocele of the Cervical Stump, with a Discussion of the Merits of Total Versus Supravaginal Hysterectomy, Am. J. Obst. & Gynec. **57**:341, 1949). Dr. Bornstein's material of 43 cases of "histologically proved carcinomas of the cervix, seven of which arose in cervices left after supravaginal hysterectomy" does not lend itself to analysis. I merely draw attention to the fact that this is an incidence of 16.3 per cent of stump cancer, which far exceeds any previously described in the literature.

Finally I desire to refer to a letter which recently came to me from a medium-sized town in Kansas, in which the surgeon tells me. "Not so long ago I had an argument with a well known pathologist in our area who made this flat statement, 'Any surgeon who still performs subtotal hysterectomies leaves himself wide open to the charge of malpractice'." Apparently pathologists like Dr. Bornstein and the one that I have just quoted anonymously, because his name was not given to me, assume a radical attitude which, in my experience as well as that of some of my colleagues, is not warranted. On the other hand, extreme care in the preoperative recognition of early cervical cancer must be observed. The number of stump carcinomas will decrease proportionately to the amount of preoperative care exercised in investigating the condition of the cervix.

ROBERT T. FRANK, M.D., New York.

DRAMAMINE® FOR NAUSEA OF ELECTRIC SHOCK AND MIGRAINE

To the Editor:—Within the past two months I have successfully used dramamine® (beta-dimethylaminoethyl benzohydryl ether 8-chlorotheophyllinate) in two conditions in which, to the best of my knowledge, success has not yet been reported. The results obtained have been striking.

Many patients awaken after electroshock therapy with feelings of nausea. Vomiting occurs in some of these cases. The usual medication, such as antispasmodic or hyoscine therapy, has not relieved them of this discomfort. When this gastrointestinal disturbance occurred in the past one could only tell the patient that in time the discomfort would disappear.

Premedication with dramamine,® I believed, might prove effective in the prevention of this symptom. I have limited its use to those patients who have complained of nausea or who have vomited after one or more treatments. One of the patients to whom I gave this drug had received forty treatments and had vomited regularly each time.

The usual procedure is to administer a 100 mg. tablet one hour before the appointed time for treatment. I have used this in 15 cases without a single failure. In each instance the patient was specifically questioned on awakening, and each time the presence of nausea was denied.

I gave one of my patients who was receiving electroshock therapy a prescription for dramamine,® to relieve her postshock nausea. One day her father told me that he had had an episode of migraine, from which he had been suffering for a long time. Since he experienced some nausea with his headache, he decided to try one of his daughter's pills. He claimed that the migraine was relieved completely and rapidly. I then decided to try dramamine® in a series of patients who had been suffering from migraine for years. Most of these were relieved by ergotamine tartrate, but disliked the side effects produced by that drug. I have treated 8 migrainous patients with dramamine.® One of these had been having attacks every two or three weeks. Every one of these patients reported benefit from the use of the drug. As with other drugs given for migraine, it appears to be most effective when given as soon as the symptoms are evident to the patient. The only side effect complained of is sleepiness.

I realize that my series of patients in both of the instances described is small. I recognize that there have been no control studies with placebos. However, the response to dramamine,® in both postshock nausea and in migraine, has been so dramatic that I felt my experience should be published and should constitute a preliminary report of its application in these conditions.

EDWARD F. KERMAN, M.D., Baltimore.

Medical Motion Pictures

NEW MOTION PICTURE ADDED TO A. M. A. FILM LIBRARY

Growth Cleavage (Maturation Division) MEIOSIS in the Sperm Cells of the Grasshopper Psophus Stridulus L. 16 mm., black and white, sound, 675 feet (1 reel), showing time nineteen minutes. Prepared in collaboration with Dr. Robert L. Bacon, Department of Anatomy, Stanford University School of Medicine. Produced in 1944 by Kurt Michel at the Carl Zeiss Works, Jena. Reproduced in 1948 by Arthur T. Brice, Ross, Calif. Procurable on loan (service charge $2) from the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

This motion picture shows by time-lapse photography the reduction division, followed by the equatorial division in spermatogenesis. The chromosomes and mitochondria show well in dark contrast, and the process is easily followed. Unfortunately, the spindle fibers scarcely show.

The phase microscope gives to the living cell a contrast equivalent to staining. Diagrams showing the process of the two divisions are included. The addition of "growth cleavage meiosis" to the title is believed redundant promotion; however, the narration for the most part is factual and descriptive.

The phase microscope makes possible, for the first time, clear visualization of unstained cellular detail, and this film clearly shows the process of spermatogenesis from the primary spermatocyte to the early stages of sperm formation.

This film is recommended for showing to medical students in courses in embryology and to college students. The photography is excellent and the narration is clear.

FILM REVIEWS

Operative Procedures for Post-Poliomyelitis Paralysis. 16 mm. and 35 mm., color, sound, 1,700 feet (1 reel), showing time fifty minutes. Produced in 1948 by RKO Pathe, Inc., through the cooperation of the Orthopedic Division, Department of Surgery, Duke University School of Medicine, Durham, N. C. Procurable on loan from The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5.

This film depicts four unrelated operative procedures for the treatment of postpoliomyelitis paralysis. The operative technic of epiphyseal arrest by the method described by J. Warren White is first shown. Then the operative technic of open lengthening for contracture of the tendo achillis is illustrated. Emphasis is placed on preserving the peritenon and resuturing it over the tendon.

After the demonstration of the joints to be resected on a model of the foot, the technic for triple arthrodesis is shown in an actual case. Postoperative care is briefly illustrated. An operative technic for knee fusion is demonstrated on a patient with poliomyelitis which is done to enable the patient to discard a long-leg brace.

The final section of the film shows the results of the various operative procedures. A six month follow-up of a patient with the epiphyseal arrest is shown in which the patient had a full range of motion in the knee. The roentgenograms showed epiphyseal fusion to have taken place. A second patient with an epiphyseal arrest done five years previously is also presented. A patient with lengthening of the achilles tendon and triple arthrodesis was shown six months postoperatively. A patient with a fused knee and a stabilized foot is presented.

The teaching value of this film would have been enhanced by division into four shorter films portraying each operative procedure separately. Perhaps the results in each case would be best shown immediately after each operative procedure.

This film is suitable for resident training but would appear to have little value for medical students and physicians not specifically interested in the operative procedures demonstrated.

Since there is little background information given on selection of cases for the procedures and as operative technics are always changing, the usefulness of this film can be expected to be relatively short.

The color is fair to good. In many instances a closer view of the surgical field would have improved the film. Panning of the camera to a close-up of the surgeon, nurses and instrument table seems unnecessary in a film designed for a scientific audience.

Endaural Approach to Temporal Bone Surgery. 16 mm., black and white, silent, 2,300 feet (2 reels), showing time sixty-three minutes (sound speed). Prepared by Howard P. House, M.D., Department of Otolaryngology, School of Medicine, University of Southern California, Los Angeles. Produced in 1949 by and procurable on rental or purchase from Billy Burke Productions, 7416 Beverly Boulevard, Hollywood.

This motion picture is divided into six parts. The first part starts with intravenous anesthesia and continues with the preparation of the ear for surgery with the draping of the patient. The second part shows the endaural incision used to expose the temporal bone.

The third part shows the simple mastoid operation on the cadaver with the endaural approach. Exception may be taken by some otologists to the use of the perforating burr to enter the mastoid antrum more or less blindly and also to the rather incomplete removal of the mastoid cells in the simple mastoidectomy.

The fourth part depicts the modified radical mastoidectomy on the cadaver. The fifth part depicts the fenestration operation on the cadaver as performed by the author.

The sixth section depicts the radical mastoid operation by the endaural approach done on the cadaver. The author's method of elevating granulations from the medial wall of the attic and middle ear so as to avoid injury to the facial nerve and stapes has merit.

This is of value to graduate students of otology and practicing otologists who are learning the endaural surgical technic. The teaching value would be enhanced by labeling of the diagrammatic drawings.

The film is lengthy. It would be better for teaching purposes if each of the six subjects were divided into separate reels. As presented, the student will experience difficulty in retaining so much material at one sitting.

The photography is excellent. The anatomic details are well demonstrated. Diagrammatic drawings throughout the film are mediocre and lack labels, which does not add appreciably to the teaching value of the film.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20 Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Oral.* Cincinnati, Oct. 21-23. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Written and Review of Case Histories. Part I.* Various Centers. Feb. 3. Final date for filing applications is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Pediatrics: New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: November. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas:* *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H Young, 1415 Main St., Little Rock.

Colorado:* Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Connecticut:* *Examination.* Hartford, Nov. 8-9. Secretary to the Board, Dr. Creighton Barker, 160 St. Ronan Street, New Haven. *Homeopathic.* Derby, Nov. 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

District of Columbia:* *Examination.* Washington, Nov. 14-15. Sec., Dr G. C. Rubland, 4130 E. Municipal Bldg., Washington.

Florida:* *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa:* *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, December. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maine: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Massachusetts: Boston, Nov. 15-18. Sec., Dr. George L. Schadt, 413 East State House, Boston.

Minnesota:* Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Missouri: *Examination.* Jefferson City, October 24-26. *Reciprocity.* Kansas City, October, 23. Exec. Sec., Mr. John A. Hailey, State Capitol Building, Jefferson City.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

North Carolina: *Endorsement.* Asheville, Oct. 17. Sec., Dr. Ivan Proctor, 226 Hillsboro Street, Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, December. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma:* *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon:* *Endorsement.* Portland, Nov. 4. *Written.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington:* Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin:* *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy. Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Esther B. Starks, 1459 Ogden Street, Denver.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Texas: *Examination.* Austin, Oct. 21-22. Sec., Rev. Raphael Wilson, 306 Nalle Building, Austin.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Act: Right of Drugless Practitioner to Perform Blood Transfusion.—This was an action by a drugless practitioner to compel the board of medical examiners to reinstate his license, which had been rescinded after his conviction of unprofessional conduct. From an adverse decision, the petitioner appealed to the district court of appeals, second district, division 2, California.

The petitioner was found guilty by the board of medical examiners of using the prefix "Dr." and the suffix "M.D." in connection with his name and of having performed a blood transfusion. The Government Code provides, "Where a contested case is heard before an agency itself, no member thereof who did not hear the evidence shall vote on the decision." The district court of appeals found that all the members of the board of medical examiners who voted to convict the petitioner of having used the prefix "Dr." and the suffix "M.D." had not heard the evidence in support of such charge. The conviction on that ground was therefore held void.

As to the other ground, continued the court, there was no irregularity in the procedure. The evidence before the board indicated that the petitioner had given a certain person a blood transfusion by injecting human blood into his blood vessels for the purpose of resisting disease. The transfusion was accomplished by surgical means, by penetration of the tissue, an act which a drugless petitioner is forbidden to perform. The petitioner contended, however, that the transfusion was done under the direction of an osteopath, who testified that he considered a blood transfusion desirable and that he directed the petitioner to give the patient 250 cc. of whole blood with the usual proceeding of typing and cross matching. He further stated that he believed the petitioner's status to be a laboratory technologist and did not know that the petitioner held a license as a drugless practitioner. The petitioner testified that he performed the blood transfusion as directed, but at the time of the operation the osteopath was 80 miles away. Thus it was not done under his supervision. The petitioner adopted and accepted the evidence of the osteopath. This evidence, said the court of appeals, is conclusive that the penetration of the tissue of a person's body in making a blood transfusion was an act which a drugless practitioner was expressly forbidden to perform. The evidence further showed that the petitioner recommended and delivered liniment and acetylsalicylic acid to the patient. "The term 'drug' includes all medicines for internal or external use. Pen. Code, Sec. 383 * * * The use of a substance determines the use of its classification. If a substance is used for medicinal purposes it is a drug."

The judgment of the trial court refusing to order reinstatement of the petitioner's licence was therefore sustained. *Cooper v. Board of Medical Examiners, 207 P. (2d) 844, (Calif. 1949).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

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Primary and Secondary Spontaneous Habitual Abortion. C. T. Javert, W. F. Finn and H. J. Stander.—p. 878.
Peritoneal Bodies and Cysts of Broad Ligament. R. R. Greene, B. M. Peckham and G. H. Gardner.—p. 890.
Selective Management of Placenta Previa. R. J. Paalman and A. B. Hunt.—p. 900.
Cervical Pregnancy: Report of 2 Cases and Discussion of Treatment. D. G. Morton.—p. 910.
Uterine Dystocia. M. P. Rucker.—p. 918.
*Use of Sulfathiazole Powder in Vagina Immediately After Completion of Delivery. C. W. Rotter and R. H. Long.—p. 925.
Carcinoma of Cervix Concomitant with Pregnancy. M. G. Sadugor, J. P. Palmer and M. C. Reinhard.—p. 933.
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*Results in 138 Cases of Endometriosis Treated by Conservative Surgery. W. B. Bacon.—p. 953.
*Dicumarol in Treatment of Antenatal Thrombo-Embolic Disease: Report of Case with Hemorrhagic Manifestations in Fetus. J. J. Sachs and J. S. Labate.—p. 965.
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Study of 145 Consecutive Twin Pregnancies. W. D. Hawker and M. Allen.—p. 996.
Observations in Behavior of Presentation and Results with External Version in 190 Breech Cases. P. E. Thornhill.—p. 1000.
Quadruplet Pregnancy: Diagnosis at Seventeen Weeks of Gestation. J. W. Hartman Jr., F. Feightner and P. Titus.—p. 1005.

Use of Sulfathiazole Powder in Vagina After Delivery.—A study of the effect of sulfathiazole powder in the vagina immediately after the completion of delivery was begun by Rotter and Long in 1946. The object was to evaluate the effect of the drug on the morbidity of the early postpartum period. After the baby and placenta have been delivered and the necessary repair completed and the bleeding controlled, the labia are separated with two fingers and 5 Gm. of sulfathiazole powder is instilled deep into the vaginal tract and spread down into the posterior fornix and about the cervix with the index and middle fingers. The series which forms the basis of the present comparison includes all vaginal deliveries performed at Glenville Hospital and Booth Memorial Hospital from June 15, 1948 to Aug. 1, 1948. This series consists of two groups: the first in which sulfathiazole powder was used, and the second in which no sulfonamide compound was used in the vagina. It was found that with the prophylactic use of sulfathiazole powder in the vagina as the last step in vaginal delivery there is a definite suppression in the amount and in the offensive odor of the lochia. Redness and edema of episiotomy wounds occurred in 19.3 per cent of the sulfathiazole-treated patients as compared to 40.5 per cent in the nontreated group. No case of wound disruption has occurred in the series in which sulfathiazole was used, whereas it occurred in 4 cases in the control series. There was a tendency toward lesser temperature elevation in the treated groups. Pain, especially in patients who had episiotomies, was severe enough to necessitate medication in 32.2 per cent of the treated group as compared to 55.2 per cent of the nontreated group. The general condition of the patients in the treated group was better than in the control group. There were no allergic reactions to the use of sulfathiazole powder in the described procedure.

Conservative Surgery for Endometriosis.—Bacon shows that in endometriosis sufficiently serious to warrant laparotomy, a major problem is whether or not to conserve menstrual function and childbearing ability. While this matter must be decided for each patient, it was considered that an evaluation of two questions might be of assistance to the surgeon. If a conservative operation is performed, first, what are the chances for relief of symptoms or for progression or recurrence of the disease demanding later radical surgical procedures or radiation; second, what is the outlook for future pregnancy? The author reviews 138 cases of pelvic endometriosis, treated by laparotomy which conserved childbearing ability. Sixty-eight patients were relieved of symptoms; 29 were partially relieved, and 41 required later radical surgical treatment or radiation. One hundred and twelve patients in the series were married and under 40 years of age; of these, 30 delivered a total of 39 living children. The average interval between operation and delivery was 2.7 years. The prognosis for symptomatic relief and future pregnancy does not seem to be affected by age, symptomatology, the location and extent of the disease or the magnitude of the conservative operation performed. A conservative procedure can be recommended, even in the presence of a considerable amount of endometriosis.

Dicumarol® in Antenatal Thromboembolic Disease.—Sachs and Labate report the case of a 23 year old multipara who was admitted in the seventh month of pregnancy with a diagnosis of phlebothrombosis and pulmonary embolism. Because of three additional episodes of pulmonary embolism, each occurring as the prothrombin time was allowed to approach normal, it was necessary to continue dicumarol® therapy through the last two months of pregnancy and the postpartum period. Intrauterine fetal death occurred on the fifty-third hospital day, and on the seventy-fourth day the woman delivered a stillborn macerated fetus. Examination of the fetus revealed that death was due to hemorrhage, apparently caused by dicumarol.® Attention is drawn to the danger of fetal death from hemorrhage, which may result from the administration of the drug during the antenatal period.

American Journal of Pathology, Ann Arbor, Mich.

25:357-574 (May) 1949

*Carditis in Poliomyelitis: Anatomic Study of 35 Cases and Review of Literature. T. E. Ludden and J. E. Edwards.—p. 357.
Fate of Blood Injected into Arterial Wall. W. B. Wartman and T. C. Laipply.—p. 383.
Gastric Submucosal Granuloma with Eosinophilic Infiltration. J. Vaněk. —p. 397.
Lesions of Hypersensitivity Induced in Rabbits by Massive Injections of Horse Serum. R. H. More and C. R. McLean.—p. 413.
*Morphology of Bauxite-Fume Pneumoconiosis. J. P. Wyatt and A. C. R. Riddell.—p. 447.
Hibernoma, a Special Fatty Tumor: Report of Case. O. A. Brines and M. H. Johnson.—p. 467.
Arteriosclerotic Lesions in Pyridoxine-Deficient Monkeys. J. F. Rinehart and L. D. Greenberg.—p. 481.
Morphology, Androgenic Function, Hyperplasia, and Tumors of Human Ovarian Hilus Cells. W. H. Sternberg.—p. 493.
Oxyphilic Granular Cell Adenoma of Parotid Gland (Oncocytoma): Report of 5 Cases and Study of Oxyphilic Granular Cells (Oncocytes) in Normal Parotid Glands. L. Meza-Chávez.—p. 523.
Intramural Fibroma of Heart. W. Kulka.—p. 549.
Mucormycosis of Large Bowel. M. Moore, W. A. D. Anderson and H. H. Everett.—p. 559.
Canine Toxoplasmosis. R. F. Langham and L. B. Sholl.—p. 569.

Carditis in Poliomyelitis.—The 35 cases investigated by Ludden and Edwards represent all of the cases of poliomyelitis in which necropsy was performed at the Mayo Clinic from Aug. 2, 1925 to Dec. 11, 1946, inclusive, and in which the hearts were available for study. Myocarditis was observed in 14 of 35 cases of fatal poliomyelitis. There was one example each of acute vegetative endocarditis and endarteritis of a patent ductus arteriosus among the cases in this study. Since the cardiovascular lesions in these cases were otherwise unsatisfactorily explained, poliomyelitis virus must be considered as possibly causative. Proof that cardiovascular lesions in acute poliomyelitis are caused by the poliomyelitis virus will depend on demonstration of the virus in the lesions and the experimental production of such lesions. The diagnosis of myocarditis in acute poliomyelitis is seldom made during life, but it should be suspected in every patient who is seriously ill with acute poliomyelitis. Myocarditis, as observed in this series of cases, was usually more severe and proportionately more common in adults than in young children. There was no specific correlation of type of paralysis—bulbar or spinal—with the presence or absence of myocarditis. The actual role of myocarditis as a cause of sudden death in acute poliomyelitis could not be determined in this study, except in 1 patient, who had a perforation of the right atrium. Three of the 6 patients who died suddenly were found to have myocarditis, but all of these patients had bulbar involvement, which might have explained their sudden deaths.

Morphology of Bauxite-Fume Pneumoconiosis.—Wyatt and Riddell state that a pulmonary disease associated with the manufacture of alumina abrasives was uncovered recently. The manufacture of these abrasive powders, the principal ingredient of which is Arkansas bauxite, has resulted in a new and lethal pulmonary hazard. The industrial process involved produces an abrasive, made up of an aluminum oxide known as "corundum." The processing is carried out in electric furnaces with the mix consisting of finely ground bauxite, iron and coke. Carbon electrodes are lowered to the surface of the mix and fusion occurs at a temperature of 2,000 C. Dense white fumes are evolved during this process, leading to contamination of the furnace rooms. All fatal cases have occurred in furnace feeders or crane operators. The clinical syndrome consists of shortness of breath, cyanosis, substernal discomfort and recurrent episodes of spontaneous pneumothorax from rupture of emphysematous bullae. Diffuse, irregular, lace-like and granular shadows, greatly increased width of mediastinum and collapse of the lung are the cardinal features of the roentgenogram. The authors describe the salient features of the morbid anatomy of 6 fatal cases of bauxite fume pneumoconiosis. The excessive, diffuse fibrosis throughout the lung tissue favors a "chemical dust" as the cause. The high silica content in the furnace fumes and in the lungs originally forced consideration of silica as the specific incitant, but this was abandoned. The authors suggest that the mechanism of the bauxite fume pneumoconiosis is that of an amorphous dust evoking a rapid, sclerosing process within the pulmonary septums and interfering with the koniophage transmission mechanism usually responsible for dust elimination. The end result is a diffuse interstitial fibrosis with absence of nodule formation. They consider the amorphous alumina dust in intense concentration as the dominant causative agent, but the final answer as to whether these unusual morphologic lesions owe their development to the combined effect of amorphous silica and alumina in the fumes or to the alumina dust alone will have to be obtained from studies now in progress.

American Journal of Physiology, Baltimore

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Conditions Modifying Resistance to Acceleratory Forces and Protection by Abdominal Pressure. S. W. Britton and C. R. French.—p. 137.
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Effect of Extracellular Electrolyte Depletion on Brain Electrolyte Pattern and Electroshock Seizure Threshold. E. A. Swinyard.—p. 163.
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Thyroid and High Oxygen Poisoning in Rats. M. S. Grossman and K. E. Penrod.—p. 182.
Objective Evaluation of Transfusion Therapy in Hemorrhagic Shock. J. B. Allison, W. H. Cole, W. W. Walcott and others.—p. 191.
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Normal Blood Volume, Plasma Volume and Thiocyanate Space in Rats and Their Relation to Body Weight. C. F. Wang and D. M. Hegsted.—p. 218.
Self-Selection of Salt Solutions and Water by Normal and Hypertensive Rats. M. Abrams, A. I. C. DeFriez, D. C. Tosteson and E. M. Landis.—p. 233.
Anesthesia and Gastric Secretion. M. Schachter.—p. 248.
Nonexcretion of Serum Alkaline Phosphatase by Liver and Pancreas of Normal Dogs. C. C. Wang and M. I. Grossman.—p. 256.
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Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

33:201-296 (May) 1949

Rate of Multiplication of Treponema Pallidum in Normal and Immune Rabbits. M. C. Cumberland and T. B. Turner.—p. 201.
Morphologic Changes in Syphilitic Lesions During the Jarisch-Herxheimer Reaction. W. H. Sheldon and A. Heyman.—p. 213.
The Jarisch-Herxheimer Reaction in Early Congenital Syphilis: Study of 93 Patients Treated with Penicillin Alone. O. A. Pardo and H. A. Tucker.—p. 225.
Pencillin Treatment of Syphilitic Primary Optic Atrophy: Interim Report. J. V. Klauder and B. A. Gross.—p. 234.
Ratio of Gonorrhea to Syphilis as Occurring in the United States Navy. R. W. Babione.—p. 243.
*Aureomycin Treatment of Acute Gonorrhea in Males. H. S. Collins, H. Trousdale, T. F. Kaiser and others.—p. 263.
Benign Late Gummatous Syphilis Occurring More Than 40 Years After Infection. R. H. Wiggall and R. D. Hahn.—p. 270.
Agranulocytic Angina, a Rare Complication of Therapeutic Malaria: Case Report. I. Kopp.—p. 274.
Possibility of Blood Bank Transmission of Lymphogranuloma Venereum Infection. L. T. Wright.—p. 280.

Aureomycin in Gonorrhea.—Collins and co-workers tested the sensitivity of eleven strains of gonococci isolated from exudate obtained from patients with gonorrhea. In vitro studies were performed simultaneously and in the same manner with aureomycin, penicillin, streptomycin, bacitracin, polymyxin D, polymyxin B and sulfadiazine. Weight for weight, aureomycin proved to be much less active than penicillin against gonococci in vitro but much more active than the other antibacterial agents. One hundred and forty-eight male patients with gonorrhea received aureomycin hydrochloride by mouth, the total dose varying from 1 to 3.5 Gm. over a period of twelve to thirty-six hours. Follow-up examinations were made on 122 patients. One hundred and six patients were cured; 16 were not cured, including 7 patients who probably had reinfection. A total dose of 2.5 Gm. or more of aureomycin hydrochloride must be given over a period of thirty-six hours or longer in order to achieve the optimum cure rate. The cure rates from such treatment, except possibly from the larger doses, are definitely inferior to those obtained from the usual doses of intramuscular penicillin. Aureomycin may prove useful in patients who are sensitive to penicillin or possibly in those who are "penicillin-resistant." It may also prove suitable for use against mixed infection with gram-negative bacilli.

American Practitioner, Philadelphia

3:451-514 (April) 1949

Standardization of Treatment of Congestive Heart Failure. J. I. Goodman and S. Wassermann.—p. 451.
Critique of Physiologic Methods in Psychiatric Therapy. C. H. H. Branch and L. H. Smith.—p. 460.
Clinical Management of Anemias of Pregnancy. J. R. Wolff and L. R. Limarzi.—p. 475.
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Brachialgia. L. Cozen.—p. 497.
Consideration of Calcium and Phosphorus Metabolism, Including Normal and Pathologic Physiology of Parathyroid Glands. L. W. Kinsell.—p. 499.

3:515-578 (May) 1949

Treatment of Diarrhea in Infants. F. E. Simpson.—p. 515.
The Surgeon's Side of Gallbladder Disease. J. R. Watson.—p. 520.
Management of Spastic Constipation as Functional Disorders Associated with Emotional Conflict. T. P. Almy.—p. 523.
Physiology of Fatigue and Its Clinical Significance. J. L. Switzer.—p. 529.
Treatment of Acute Proctologic Conditions. E. Granet.—p. 533.
Late Effect of Vagus Nerve Resection for Peptic Ulcer. P. A. Zoller, S. A. Localio and J. W. Hinton.—p. 539.
*Treatment of Migraine with Nicotinic Acid. R. F. Grenfell.—p. 542.
Treatment of Hypochondriasis. J. M. Lyon.—p. 545.
Breathing Exercises as Adjunct in Treatment of Bronchial Asthma and Pulmonary Emphysema. S. M. Dorinson.—p. 550.

Nicotinic Acid in Migraine.—*On the premise that migraine* might be due to a temporarily insufficient blood supply, Grenfell gave intravenous injections of nicotinic acid to create a dilatation of the blood vessels. Patients were selected for treatment only if one or more of the other methods currently in use had been totally or partly ineffective. The procedure consisted of administering a sufficient amount of nicotinic acid intravenously to produce a flushing that would last for a minimum of fifteen minutes. If an initial flushing was produced by 100 mg. but disappeared within fifteen minutes, an additional 50 to 200 mg.

of nicotinic acid were given. A total of thirty-one injections were given to 15 patients. This form of therapy was successful in 13 patients and did not cause toxic manifestations in any of them. Because increase in blood pressure or pulse rate did not result, it appears possible to use this drug even in the presence of cardiac disease and hypertension. Nicotinic acid is a safe, simple means of treating the acute attack of migraine.

American Review of Tuberculosis, New York

52:469-598 (May) 1949

*Tuberculosis in Persons over Forty. A. D. Chaves.—p. 469.
Tuberculosis in the German Population, United States Zone of Germany. P. E. Sartwell, C. H. Moseley and E. R. Long.—p. 481.
What Does a Roentgenographic Survey Teach the Public? Including Comparison with Other Tuberculosis Information Polls. C. B. Galiher and J. E. Wright.—p. 494.
Oral Protein Hydrolysate in Pulmonary Tuberculosis. A. A. Kinnear and E. N. Keen.—p. 511.
Supplementary Oral Protein Hydrolysate Therapy in Tuberculosis. S. Cohen and Y. Y. Ma.—p. 519.
Ninety Consecutive Cases of Pulmonary Tuberculosis Treated by Combination of Streptomycin and Pneumothorax. G. A. Hyman and S. H. Hoffman.—p. 539.
*Effect of Streptomycin, Para-Aminosalicylic Acid (PAS) and Their Combination on *Tubercle Bacillus in Vitro and in Vivo*. R. G. Bloch, K. Vennesland, R. H. Ebert and G. Gomori.—p. 554.
Effect of Tubercle Bacilli on Migration of Phagocytes in Vitro. M. Allgöwer and H. Bloch.—p. 562.
Virulence and Tuberculogenic Studies of Sixty Consecutive Weekly Lots of BCG Vaccine Produced by Standard Technic. K. Birkhaug.—p. 567.
Sanatorium Program for Bacteriologic Diagnosis of Tuberculosis: Results Obtained in Cases Admitted During Period of Ten Years. C. R. Smith.—p. 589.
Use of Slide Culture Technic for Rapid Streptomycin Sensitivity Testing. M. Cummings and M. Drummond.—p. 599.

Pulmonary Tuberculosis After the Age of Forty.—Chaves points out that it is the impression of many phthisiologists that the first roentgenographic evidence of significant pulmonary tuberculosis after 30, and even after 40, is not at all a rarity today. Of the 344 cases of incipient pulmonary tuberculosis recently reported by Reisner, 17 developed after the age of 40. The author reports 5 recently observed cases of incipient pulmonary tuberculosis in persons over 40 years. All 5 patients had recent "normal" roentgenograms of the chest. Of these 5 patients, 1 died of a myocardial infarction following a first stage thoracoplasty, 2 have active progressive disease complicated by diabetes, 1 has active, moderately advanced tuberculosis, and the infection in 1 is arrested. By adding these 5 cases to the aforementioned 17 cases observed by Reisner, a total of 22 cases were made available for study. Of this group, 8 subjects are dead, 4 have active and progressive disease with a poor prognosis, 2 have active but minimal lesions and the disease in 8 was considered to have been arrested at the conclusion of the period of observation. In the four months after this paper was submitted for publication, the writer observed 9 additional cases of incipient pulmonary tuberculosis in persons over 40 years of age. He stresses the need for repeated roentgenologic examinations and tuberculin tests in the older age group.

Streptomycin and Para-Aminosalicylic Acid in Experimental Tuberculosis.—Bloch and associates compared, in a previous report, the response of the tubercle bacillus in vitro to various concentrations of para-aminosalicylic acid, streptomycin and the combination of the two. They describe in vivo experiments on guinea pigs. Streptomycin alone, even in small doses given once a day and for a short period of time, prevented the progression of tuberculosis. Para-aminosalicylic acid alone in large doses had a favorable effect on experimental tuberculosis. The combination of streptomycin and para-aminosalicylic acid had a much more favorable effect on experimental tuberculosis in the guinea pig than either drug used alone. On the basis of these in vitro and in vivo experiments with para-aminosalicylic acid and streptomycin in combination, two important clinical possibilities became apparent. First, it would seem feasible that, with a combination of the two drugs, smaller doses of streptomycin could be used effectively in the treatment of tuberculosis, thus reducing the hazard of toxic effects from this drug. Second, a delay in the emergence of streptomycin-resistance might be anticipated, since para-aminosalicylic acid should be capable of suppressing growth of streptomycin-resistant strains.

Annals of Surgery, Philadelphia

129:545-736 (May) 1949

Surgical Man. E. P. Lehman.—p. 545.
Sex Ratio: Experimental Studies Demonstrating Controlled Variations—Preliminary Report. D. Hart and J. D. Moody.—p. 550.
Treatment of Congenital Atresia of Esophagus with Tracheo-Esophageal Fistula. I. A. Bigger.—p. 572.
Esophageal Resection with End-to-End Anastomosis: Experimental and Clinical Observations. E. F. Parker and W. S. Brockington.—p. 588.
Surgical Treatment of Pulsion Diverticula of Thoracic Esophagus. S. W. Harrington.—p. 606.
Esophageal Rupture Complicating Craniotomy—Symptom Complex and Proposed Surgical Treatment. E. F. Fincher and H. S. Swanson.—p. 619.
Treatment of Hyperthyroidism in Children. J. H. Lyons. —p. 631.
Thyroglossal Cysts and Sinuses. S. F. Marshall and W. F. Becker.—p. 642.
Primary Repair of Severed Parotid Duct: Review of Literature and Report of 3 Cases. R. S. Sparkman.—p. 652.
Distention of Subarachnoid Space with Cerebrospinal Fluid in Infants; Enlargement of Head and Spasticity; Surgical Correction. C. Bagley Jr., R. K. Thompson and R. M. N. Crosby.—p. 662.
Hyperfunctioning Tumors of Adrenal Cortex with Report of 8 Cases. W. Walters and R. G. Sprague.—p. 677.
Indications and Results of Splenectomy. W. H. Cole, L. Walter and L. R. Limarzi.—p. 702.
Chondroblastic Tumors of Bone: Benign and Malignant. M. M. Copeland and C. F. Geschickter.—p. 724.

Archives of Internal Medicine, Chicago

83:363-476 (April) 1949

Recrystallized Insulin for Diabetic Patients with Insulin Allergy. J. E. Jorpes.—p. 363.
Ascorbic Acid Deficiency in African Disease Onyalai. W. E. Strangway and A. K. Strangway.—p. 372.
Retinal Arteriovenous Nicking: Long Term Study of Development of Arteriovenous Nicking in Hypertensive Patients. S. A. Shelburne.—p. 377.
Clinical Differentiation of Various Types of Nontoxic Nodular Goiter. M. E. Dailey, M. H. Soley and S. Lindsay.—p. 382.
*Diabetes and Pregnancy: Clinical Analysis. McL. Patterson and N. Burnstein.—p. 390.
Antibody Response in Patients with Hypoproteinemia with Special Reference to Effect of Supplementation with Protein or Protein Hydrolysate. M. G. Wohl, J. G. Reinhold and S B Rose.—p. 402.
*Electrolyte Composition of Sweat: Clinical Implications as Index of Adrenal Cortical Function. J. W. Conn.—p. 416.
Blood Pressure Levels in the Netherlands During War. A. H. Nieuwmeijer and K. Brandsma.—p. 429.

Diabetes and Pregnancy.—Patterson and Burnstein reviewed all deliveries in diabetic and prediabetic women at Charity Hospital, New Orleans, over a ten year period. Additional data were secured from obstetric histories of 148 women who at the time of study were active patients in the diabetic clinics of the same hospital. Diabetic and prediabetic women were as fertile as normal women. Their incidence of miscarriages was but little higher than estimates for normal women. The mortality and morbidity rates in the mothers were definitely greater than normal, but not sufficiently so to contraindicate pregnancy in diabetic women. The insulin requirement frequently rose, and occasionally fell, but usually was little affected by the pregnancy. The fetal and neonatal mortality for those pregnancies brought to term during diabetic years was 35 per cent. The mortality rate progressively increased during the years before the onset of the diabetes and was significantly above normal for twenty years prior to the development of manifest diabetes. Younger diabetic women have a better chance of delivering live babies than those over 35 years of age. Premature delivery was frequent but resulted in live babies as frequently as when the pregnancy was brought to term. Early cesarean section is considered the surest method of obtaining live babies but is not advocated as a routine procedure. The incidence of toxemia was three and one-half times that for nondiabetic women. Obstetric abnormalities, other than toxemia, were more frequent than normal. The occurrence of large babies was notable in diabetic and prediabetic years.

Electrolyte Composition of Sweat.—Conn studied the relationship between adrenal cortical function and the concentrations of sodium and chloride in sweat. The study deals with observations on patients with various endocrine disorders involving abnormal function of the adrenal cortices. The concentrations of sodium and chloride in the sweat of normal persons fall within the range of about 15 to 60 milliequivalents per liter, with a mean value of 42 milliequivalents. Administration of desoxycorticosterone acetate or of purified pituitary adrenocorticotropic hormone produces a great fall in these levels and a reversal of the normal relationship of sodium to chloride. When adrenocorticotropic hormone is employed, increased production of androgenic steroids and of "11-oxysteroids" is observed, in addition to the desoxy-like corticosteroid effect. Patients with untreated Addison's disease show concentrations of sodium and chloride in sweat far in excess of the highest normal values. Administration of desoxycorticosterone or of lipoadrenal cortex reduces these increased levels, but they rise again on cessation of treatment. In 2 cases of proved adrenal cortical carcinoma, in 1 of which Cushing's syndrome was exhibited and in the other the adrenogenital syndrome, the concentrations of sodium and chloride in the sweat were extremely low. A woman with extreme masculinization and increased urinary 17-ketosteroids had normal concentrations of sodium and chloride in the sweat. Many syndromes may be produced by increased adrenal cortical functions, each depending on the relative preponderance of one type of corticosteroid over the others. Sweat sodium and chloride values in Cushing's syndrome, not associated with adrenal cancer, were at or below the lowest levels observed in normal persons, but they were considerably higher than those obtained in 2 cases of carcinoma. Panhypopituitarism gives values which fall between the upper limit of normal and the high levels observed in Addison's disease. It is predicted that some pathologic conditions not yet linked to the adrenal cortex, as well as the physiologic response to some forms of stress, will be found to be associated with a preponderant activity of the desoxy-like corticosteroids. A simplified method is being studied for carrying out the sweat test in the clinical laboratory.

Archives of Neurology and Psychiatry, Chicago

61:339-466 (April) 1949

*Prognosis in Initial Stage of Disseminated Primary Demyelinating Disease of Central Nervous System. P. Thygesen.—p. 339.
Percutaneous Cerebral Angiography and Cerebral Abscess. H. F. Fabritius, A. G. Frøvig and K. Kristiansen.—p. 352.
Presenile Sclerosis (Alzheimer's Disease) with Features Resembling Pick's Disease. L. Berlin.—p. 369.
Inequality of Pupils in Head Injury: Clinicopathologic Study. W. C. Wilson.—p. 385.
*Congenital Universal Indifference to Pain. D. A. Boyd Jr. and L. W. Nie.—p. 402.
Interruption of Sympathetic Nerve Supply to Brain—Effect on Parkinson's Syndrome. W. J. Gardner and G. H. Williams Jr.—p. 413.
Tularemic Meningitis: Report of Case. W. S. Fields.—p. 422.
Involvement of Spinal Cord in Occlusion of Coronary Vessels. L. Madow and B. J. Alpers.—p. 430.
Lamellar Atrophy of Purkinje Cells Following Heat Stroke: Report of Case. L. Krainer.—p. 441.
Tonus of Voluntary Anal and Urethral Sphincters. H. F. Newman. —p. 445.

Primary Demyelinating Disease.—Thygesen reports on 144 patients, 66 men and 78 women, in the initial stage of disseminated primary demyelinating disease of the central nervous system. Fourteen patients were less than 20 years of age; 55 were between the ages of 20 and 29, 52 were between the ages of 30 and 39, and 23 were over 40 years of age. The patients were examined not later than about one year after the appearance of the first manifest symptom. In 84 patients diagnosis of multiple sclerosis and in 29 diagnosis of disseminated encephalomyelitis was made. Thirty-one patients were "under observation"; they were difficult to group under the aforementioned two conditions, but in the initial phase, the diagnosis "probable multiple sclerosis or disseminated encephalomyelitis" was suggested. The patients were followed from the onset of the acute phase of the disease for eight to fifteen years. Of the 84 patients with multiple sclerosis, one third died; 14 were practically or completely free from symptoms or were fully able bodied, and in 13 the course was characterized by long remissions or the condition became stationary at an early stage, so that the patient was capable of working after eight to fifteen years. Thus the disease was benign in its course in one fourth of the cases. Twenty-seven patients with multiple sclerosis were disabled from the initial phase, with the disease mainly progressive. When the disease had a favorable course it had almost exclusively an acute or subacute onset and followed a totally or a partially remittent course within the first year. The same mode of onset and initial course were observed in half the cases with a serious prognosis. In practically all the cases characterized by an insidious onset and steady progression within the first year the disease proved to have an unfavorable course. In the great majority of forms with a monosymptomatic or an oligosymptomatic onset the prognosis is favorable. The prognosis is much more dependent on the spread of the basic process in the central nervous system than on the intensity of the various symptoms. The course of the disease is distinctly more benign in persons of the higher age groups. Of the series of 29 patients with disseminated encephalomyelitis, 13 manifested no symptoms referable to the central nervous system after the first twelve to eighteen months of the disease. Five died, 4 of them in less than a year, and fresh myelitic changes in the spinal medulla were observed in the 2 cases in which necropsy was performed. In 7 patients the disease developed into typical multiple sclerosis; in 4 patients it proved to be encephalitis lethargica. In 19 of the 31 cases "under observation," the development of the disease warranted the designation of multiple sclerosis but with a benign course.

Indifference to Pain.—Boyd and Nie report 1 case of congenital universal indifference to pain in a girl aged 7. The patient had incurred innumerable cuts, bruises and infections but had never mentioned experiencing pain. Various injuries of her hand and fingers had become acutely inflamed and opened spontaneously, with drainage of pus, resulting in scarring and deformity. The left leg and ankle had been the seat of many acute exacerbations of chronic osteomyelitis, but the parents of the child had known of these infections only by the local swelling and redness. Physical examination showed nothing abnormal except for the multiplicity of scars and deformities which were the result of the many injuries and abscesses. Neurologic examination revealed a normal status save for the absence of the usual responses to painful stimuli. The results of this lack of pain sense were evident in the absence of portions of the ala nasi bilaterally due to self mutilation and in the rather bifid tongue, the latter being the result of biting of the tongue on a number of occasions. The normal results of neurologic examination, normal pneumoencephalogram and borderline normal electroencephalogram make it unlikely that any gross neuroanatomic lesion existed. Mental deficiency was excluded by psychometric test results and the patient's active, alert responsiveness. The nature of the disorder is unknown, and there is no proof regarding its etiology. Two concepts are offered regarding the causation of this syndrome. The first possibility is that there exists a congenital structural defect with incomplete neural connections and communicating fibers in the postcentral area with consequent inability to organize the complex concept of pain. The second possibility is that no underlying neurologic defect exists and that the indifference to pain represents an aphasic-like disturbance. A combination of these two mechanisms may occur, and the functional and structural defects cooperate to establish this aphasic-like incapacity to form a concept of pain.

Archives of Ophthalmology, Chicago

41:393-526 (April) 1949

Further Gonioscopic Studies on Canal of Schlemm. P. C. Kronfeld. —p. 393.
Vascularization of Cornea: Experimental Induction by Small Lesions and New Theory of Its Pathogenesis. D. G. Cogan.—p. 406.
Diathermy Cauterization of Ciliary Body for Glaucoma. S. J. Meyer.—p. 417.
Clinical Experiments with New Ways of Influencing Intraocular Tension: II. Use of Rutin to Enhance Tension-Reducing Effect of Miotics by Reducing Permeability of Blood-Aqueous Barrier. F. W. Stocker.—p. 429.
Allergic Ocular Reaction to Tuberculin Test: Bilateral Cyclitis and Neuroretinitis. S. Weizenblatt.—p. 436.
*Penicillin as Prophylactic Against Ophthalmia Neonatorum: Comprehensive Study. A. Sacks-Wilner and E. P. Sacks-Wilner.—p. 444.
Cataract in Dystrophia Myotonica. D. N. Farber.—p. 450.
Modified Three Character Test for Binocular Vision: Especially Applicable to Examination of Amblyopic Children. C. Berens. —p. 460.
Effects of Diabetes on Cataract and on Vision. B. L. Gordon.—p. 462.
Tuberous Sclerosis in Three Siblings. P. W. Miles and J. M. Dixon. —p. 473.

Ophthalmia Neonatorum.—The Sacks-Wilners instilled 2 to 3 drops of a solution of sodium salt of pencillin in a concentration of 5,000 units per cubic centimeter into each conjunctival sac of 251 newborn infants to act as a mild flushing agent. Preceding this instillation, immediately on the birth of the child, a conjunctival smear was taken of each eye with sterile precautions. Twenty-four hours after the instillation of penicillin a second smear of each eye was taken, and on the infant's discharge from the hospital, a third. Smears for 37 infants (14.7 per cent) taken at birth, before the instillation of penicillin, showed pus cells in one or both eyes. Twenty infants (7.9 per cent) had pus cells in the smear after twenty-four hours. On leaving the hospital, 11 infants (4.3 per cent) had pus cells in the smear without clinical evidence of infection. Before instillation of penicillin 52 infants (20.7 per cent) had gram-positive cocci on smear. One infant (0.4 per cent) had gram-positive rods. No infants had gram-negative cocci. Two infants (0.8 per cent) had gram-negative rods. At the end of twenty-four hours after the instillation of penicillin, 25 infants (9.9 per cent) had gram-positive cocci and 1 infant (0.4 per cent) had gram-positive rods. None had gram-negative cocci; 1 infant (0.4 per cent) had gram-negative rods which were present in one eye only. On their leaving the hospital, 32 infants (12.8 per cent) had gram-positive cocci; none had gram-positive rods, gram-negative cocci or gram-negative rods. A total of 53 infants exhibited gram-positive cocci or rods at birth, and only 2 infants had gram-negative rods. Gram-positive organisms are predominant in the eye of the newborn, and penicillin is most efficacious in rendering harmless the infections with gram-positive organisms. The penicillin solution which the authors used on the eyes of the infants is nonirritating. There is no danger of permanent injury to the cornea or conjunctiva. Use of the solution is not painful; it is both prophylactic and therapeutic.

Archives of Pathology, Chicago

47:307-410 (April) 1949

Asphyxia Neonatorum and Vernix Membrane. F. Dick Jr. and E. R. Pund.—p. 307.
In Vitro Studies of Lymph Nodes Involved in Hodgkin's Disease: I. Liquefaction of Culture Medium. A. Rottino.—p. 317.
Id: II. Tissue Culture Studies: Formation, Behavior and Significance of Multinucleated Giant Cell. A. Rottino.—p. 328.
Experimental Coronary Sclersosis: II. Role in Infection in Coronary Sclerosis of Cockerels. J. C. Paterson, C. A. Mitchell and A. C. Wallace.—p. 335.
Role of Age in Estrogen-Induced Lymphoid Tumors of Mice. M. Silberberg and R. Silberberg.—p. 340.
Development of Anal Ducts and Glands with Reference to Pathogenesis of Anorectal Disease. M. R. Hill, C. S. Small, G. M. Hunt Jr. and L. J. Richards.—p. 350.
Histopathologic Observations in Fatal Case of Q Fever. T. L. Perrin.—p. 361.
Mole as Possible Reservoir of Poliomyelitis. L. E. Rector.—p. 366.
Blood Cells and Hemopoietic and Other Organs of Dogs Given Intravenous Injections of 2-Chloroethyl Vesicants. J. E. Kindred.—p. 378.
Effect of Anti-Rat-Liver Serum on Rats. H. R. Estes.—p. 399.
Significance of Ductal Sclerosis in Paget's Disease: Regression of Intraductal Carcinoma. R. Marx.—p. 404.
Tissue Culture Staining "In Situ." M. E. Sano and C. A. Bocher.—p. 407.

Arkansas Medical Society Journal, Fort Smith

45:217-240 (April) 1949

Differential Diagnosis of Jaundice. F. G. Kumpuris.—p. 217.
Congenital Choanal Occlusion. P. L. Mahoney.—p. 228.

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Canadian Medical Association Journal, Montreal

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Delaware State Medical Journal, Wilmington

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Acute Renal Insufficiency: Report of 4 Cases. J. N. Attie and D. A. Baltz.—p. 45.
Cancer of Penis: Analysis of 17 Cases, with Particular Reference to Conservative Amputation. J. F. Hynes and D. A. Baltz.—p. 53.

Diseases of Chest, Chicago

15:507-730 (May) 1949. Partial Index

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Intratracheal Atomization in Treatment of Infectious Diseases of Respiratory System: Preliminary Report. P. L. Fariñas, O. Suarez de Bustamante, L. M. Lott and R. Revuelta.—p. 546.
Thrombosis of Main Stem of Pulmonary Artery Associated with Pulmonary Tuberculosis: Report of Case. A. W. Kornbluth and F. P. O'Hara.—p. 556.
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Place of Psychiatry in Program of Tuberculosis Hospital. A. Hurst, J. V. Coleman and R. Hornbein.—p. 581.
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Physician's Responsibility Toward Hard-Of-Hearing and Deafened. F. L. Lederer, R. E. Marcus and A. A. Grossman.—p. 269.
Observations on Prophylaxis of Puerperal Infection. H. E. Smith.—p. 273.
Detection of Various Chest Lesions by Mass X-Ray Survey. D. Morse.—p. 279.
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Preliminary Report on Proposed Program for Visual Screening of School Children in Illinois. D. Gray.—p. 290.
*Extrarenal Azotemia and Lower Nephron Syndrome. P. Gaberman.—p. 292.
Incidence of Intestinal Parasitic Infections in Chicago Dispensary. A. A. Knight and E. Pearl.—p. 298.
Acute Infectious Polyneuritis (Guillain-Barre Syndrome): Associated with Methemoglobinemia Possibly Due to Nitrates in Drinking Water. E. K. Kerr, E. A. Piszczek and K. M. Campione.—p. 300.
Acute Pneumococcal Epididymitis. J. H. McDonald and N. J. Heckel.—p. 304.
Multiple Sclerosis and Pregnancy. H. M. Edwards, H. M. Edwards Jr. and J. L. Tavenner.—p. 307.

Extrarenal Azotemia and Lower Nephron Syndrome.—According to Gaberman, the lower nephron syndrome is of diverse etiology, affecting essentially the cells of the tubules of the kidney, especially those of the ascending loop of Henle and the distal convoluted tubules. Pathogenetically, the common factor is probably anoxia. Although some have differentiated between "true" extrarenal azotemia and the lower nephron syndrome, the author regards them as synonymous in this discussion. The syndrome has been described in many different clinical states and is likely to be encountered in all medical specialties. It is reversible in its early stages, but later it is almost always fatal. The usual sequence of events is shock, hemoglobinuria, hemorrhage, liver damage, physicochemical alterations in the blood leading to acidosis, alkalosis and dehydration, also increase in protein catabolism and local renal disturbances. The symptoms of the lower nephron syndrome are always added to those of the initiating disease. The chief features are fatigue, drowsiness progressing into stupor and coma. The usual clinical manifestations of renal uremia, such as dehydration, anemia, pallor, pericarditis and diarrhea are rarely seen, probably because of the short duration of the disease. Oliguria is of constant occurrence and often proceeds to anuria. Urine output is usually less than 500 cc. daily. The urine is dark, sometimes smoky or frankly bloody and contains albumin, hemoglobin, debris, erythrocytes or shadow cells and hyaline, pigmented and granular casts. A rapid rise in the nonprotein nitrogen is evident in the blood. Treatment should be chiefly prophylactic. This means prompt and adequate therapy of shock, hemorrhage and electrolyte imbalance, when these occur. Certain causative factors, such as the crush syndrome, require special treatment.

Indiana State Medical Assn. Journal, Indianapolis

42:399-494 (May) 1949

Embryogenic Megacecum Complicated by Volvulus: Case Report. P. K. Cullen.—p. 415.

Chemotherapy in Pediatrics: Some Do's and Don'ts. M. K. Miller. —p. 419.

Intestinal Infection and Intra-Abdominal Hernia into Prevesical Space: Case Report. A. L. Lieberman.—p. 423.

Treatment of Chronic Brucellosis with Sodium Bismuth Tartrate: Report of 16 Cases. W. L. Wissman and T. D. Carpenter.—p. 424.

Modern Trends in Anesthesia. R. Weyl.—p. 425.

Echinococcus Cyst of Liver: 2 Proven Case Reports and 1 Suspected Case Report. I. H. Scott and G. D. Scott.—p. 434.

Role of Hypothermia in Treatment of Vascular Lesions in Geriatric Patients. R. T. Fox.—p. 435.

Industrial Medicine, Chicago

18:177-224 (May) 1949

Research in Industrial Health Problems. R. R. Sayers.—p. 189.

Experiment with Triethylene Glycol Vapor for Control of Colds Among Office Employees. W. J. McConnell.—p. 192.

Obesity: Report of 800 Cases. J. H. Hutton.—p. 197.

Backache and Orthopedic Surgeon. A. M. Rechtman.—p. 203.

Medical Program in Petroleum Industry. E. P. Luongo.—p. 210.

Chronic Absentee. A. W. Pennington.—p. 213.

Treatment of Head Colds with Antihistamine Drug. H. G. Murray. —p. 215.

*Antihistaminic Drugs in Therapy of Common Cold. J. M. Brewster. —p. 217.

Antihistaminic Drugs in the Common Cold.—Stations for the treatment of "colds" were established at a United States Naval Compound. Tripelennamine (*pyribenzamine*®), *methapyrilene* (thenylene® and histadyl®), pyranisamine (neoantergan®) and diphenhydramine (benadryl®) were included in the experiment. Combination of codeine sulfate with papaverine hydrochloride was chosen as the control medication. A total of 572 patients were treated. A cold was considered to have been aborted or cured when all signs and symptoms disappeared within twenty-four hours of the beginning of treatment. All symptoms were aborted in 19 of 21 patients in whom treatment with antihistaminic drugs was begun within the first hour after the onset of symptoms and in 48 of 55 patients treated within two hours of onset. One hundred and sixteen of 156 patients who received treatment within six hours and 165 of 234 patients who received treatment within twelve hours of onset were also cured. Thus the effectiveness of the treatment is inversely proportional to the lapse of time following the onset of symptoms before treatment is begun. Statistics from parallel controls treated with codeine sulfate and papaverine hydrochloride were much less favorable. Two or three doses of the antihistaminic drugs at four hour intervals are adequate to effect an abortion of symptoms in 90 per cent of the cases where treatment is instituted within a few hours after onset. The author believes that the incidence of the common cold will be reduced when the antihistaminic drugs eliminate the sneezing, coughing and profuse nasal discharge which now is left invisibly on door knobs, faucet handles and hand rails and in the air.

Journal of Bacteriology, Baltimore

57:291-476 (April) 1949. Partial Index

Electron Microscope Studies of Bacteriophage Active Against Streptococcus Lactis. C. E. Parmelee, P. H. Carr and F. E. Nelson. —p. 291.

Fixation of Isotopic Nitrogen by Clostridium. E. D. Rosenblum and P. W. Wilson.—p. 413.

Penicillin Uptake by Bacterial Cells. E. A. Maass and M. J. Johnson. —p. 415.

Improvement in Streptomycin-Producing Strains of Streptomyces Griseus by Ultraviolet and X-Ray Energy. G. M. Savage.—p. 429.

Quantitative Determination, in Type-Specific Antisera to Hemophilus Influenzae, of Antibody that Cross-Reacts with Encapsulated Pneumococci. C. F. C. MacPherson, H. E. Alexander and G. Leidy.—p. 443.

Studies on Streptomycin: VI. Effect of Streptomycin on Metabolism of Multiplying Bacteria. R. J. Henry, R. D. Housewright and S. Berkman.—p. 447.

Tuberculostatic Effect of Subtilin in Vitro and in Vivo. W. Steenken Jr. and E. Wolinsky.—p. 453.

In Vitro Effect of Para-Aminosalicylic Acid (PAS) in Preventing Acquired Resistance to Streptomycin by Mycobacterium Tuberculosis. O. E. Graessle and J. J. Pietrowski.—p. 459.

Journal of Immunology, Baltimore

61:283-382 (April) 1949. Partial Index

Application of Quantitative Complement-Fixation Method to Study of Q Fever Strain Differentiation. D. M. Wolfe and L. Kornfeld. —p. 297.

New Type of Phase Variation in 103 Race of Shigella Paradysenteriae. L. Veazie.—p. 307.

Retarding Action of Adrenal Gland on Growth of Sarcoma Grafts in Rats. M. R. Lewis, P. M. Aptekman and H. D. King.—p. 315.

Studies on Streptomycin: V. Complex Formation Between Streptomycin and Cellulose, Proteins, and Desoxyribonucleic Acid and Its Reversal by Salt. S. Berkman, R. D. Housewright and R. J. Henry.—p. 349.

Studies on Etiology and Pathogenesis of Experimental Meningoencephalomyelitis in the Guinea Pig. E. C. Alvord Jr.—p. 355.

Search for Human Carriers of Influenza Virus. A. P. McKee and W. M. Hale.—p. 369.

Journal of Lab. and Clinical Medicine, St. Louis

34:587-732 (May) 1949

*Uptake of Radioactive Phosphorus by Malignant Brain Tumors. T. C. Erickson, F. Larson and E. S. Gordon.—p. 587.

Tissue Responses to Physical Forces: II. Response of Connective Tissue to Piezoelectrically Active Crystals. S. M. Evans and W. Zeit.—p. 592.

Id.: III. Ability of Galvanic Current Flow to Stimulate Fibrogenesis. S. M. Evans and W. Zeit.—p. 610.

Quantitative Spectrographic Analysis of Blood and Tissue Fluids. R. M. Stecher, H. M. Bedell and I. Levis.—p. 616.

Use of Emmission Spectrograph for Quantitative Determination of Na, K, Ca, Mg and Fe in Plasma and Urine. A. J. Boyle, T. Whitehead, E. J. Bird and others.—p. 625.

Antithrombin and Heparin in Human Blood. T. A. Loomis.—p. 631.

Bone Marrow Studies in Polycythemia of High Altitudes. C. M. Merino and C. Reynafarje.—p. 637.

Plasma Tocopherol Levels in Various Pathologic Conditions. H. Popper, A. Dubin, F. Steigmann and F. P. Hesser.—p. 648.

Evaluation of Flocculation Test with Hayem's Solution. E. E. Mandel and D. A. Paris.—p. 653.

Colloidal Red Test as Index of Liver Dysfunction. E. Oppenheim, M. Bruger and E. Frost.—p. 662.

Influence of Dibenamine upon Circulatory Reactions to Ephedrine and Neosynephrine in Normal Man. W. M. Shaw, E. M. Papper and E. A. Rovenstine.—p. 669.

Estimation of Portal Circulation Time in Man. H. F. Newman and I. B. Cohen.—p. 674.

Actinomyces Bovis in Tissues and Body Fluids. P. Schain, A. De Stefano and J. P. Kazlowski.—p. 677.

Deuterium Oxide and Thiocyanate Spaces in Protein Depletion. V. Hollander, P. Chang and Co Tui.—p. 680.

Parenteral Nutrition: VIII. Vasodepressor Activity of Soybean Phosphatide Preparations. R. P. Geyer, D. M. Watkin, L. W. Matthews and F. J. Stare.—p. 688.

Id.: IX. Fat Emulsions for Intravenous Nutrition in Man. G. V. Mann, R. P. Geyer, D. M. Watkin and F. J. Stare.—p. 699.

Uptake of Radioactive Phosphorus by Brain Tumors.—Erickson and co-workers state that neoplastic cells of most types do not appear to have an active enough phosphorus turnover rate to permit isotope concentrations that even approach the therapeutic range. Because of the high phosphate content of normal brain tissue, even though its metabolism is not especially active, it occurred to the authors that possibly glioblastoma multiforme, by virtue of its rapid growth, might manifest an avidity for circulating inorganic phosphate that would make it possible to secure significant intracellular concentrations of P^{32}. Sodium phosphate containing radioactive phosphorus was injected in three different ways into patients with malignant brain tumors, in doses of either 5 or 10 millicuries. Injections were made into the median basilic vein in the antecubital space, into the carotid artery or locally into the tumor. Biopsy material was obtained at varying times after administration both from the tumor and from the adjacent normal brain tissue. By means of standard chemical technics, the ratio of concentration of radioactivity in tumor and normal brain tissue was shown to rise to as high as 19:1. Chemical fractionation of tissue phosphorus showed a small but significant concentration in the nucleoprotein of both cytoplasm and nucleus. Discussing the implications of these findings the authors state that a period of several years would be necessary to evaluate properly any therapeutic effect that may be obtained from the radiation derived from this isotope. On the basis of experiences of other investigators and on theoretic ground the authors feel that there is some justification for the administration of thirty doses of 333 microcuries each, in preference to a single dose of 10 millicuries, if a sustained radiation effect for therapeutic purposes is to be maintained. This principle should be equally applicable to any rapidly growing malignant tumor. In any clinical use of P^{32} the capacity of normal, metabolically active tissues, especially bone marrow, to withstand the radiation will be the limiting factor.

Journal of Oral Surgery, Chicago

7:95-182 (April) 1949. **Partial Index**

Surgical Management of Cancer of Mouth. J. B. Smith.—p. 95.
Preoperative Treatment and Study of Carcinoma Patients. F. W. Coggan.—p. 117.
Postoperative Care Following Carcinoma Surgery. L. W. Peterson. —p. 121.
Hemorrhagic Conditions of Importance in Oral Surgery. O. L. Ricker. —p. 129.

Journal of Urology, Baltimore

61:671-820 (April) 1949. **Partial Index**

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Androgenic Symptom Tumors of Adrenal Cortex in Children: Report of 4 Cases. G. F. Cahill and J. N. Robinson.—p. 680.
Thoraco-Abdominal Nephrectomy for Large Kidney Tumors. R. Chute and L. Soutter.—p. 688.
Ribbon Catgut: New Application in Renal Surgery. J. W. Dorsey. --p. 697.
Pregnancy in Presence of Reduced Renal Tissue. G. G. Smith.—p. 700.
Typhoid Calculus Pyonephrosis. H. H. Goldstein, M. Rosenberg, D. H. Dreizin and I. Maisel.—p. 707.
Pneumonephrosis: Complication of Necrotizing Pyelonephritis. N. M. Welch and G. C. Prather.—p. 712.
Varicosities of Kidney Pelvis: Case Report. L. A. Maslow and E. Aron.—p. 719.
Sulfonamide Induced Anuria Associated with Congenital Solitary Kidney in Child. S. Malisoff.—p. 725.
Ureterosigmoid Anastomosis by Direct Elliptical Connection: Preliminary Report. R. M. Nesbit.—p. 728.
Observations in Transplantation of Ureter. H. H. Howard.—p. 735.
New Approach for Surgery of Middle Third of Ureter. J. E. Maurer, R. Lich Jr. and O. Grant.—p. 744.
Pedicle Graft Cutaneous Ureterostomy. G. W. Fish and T. W. Stevenson.—p. 749.
Primary Mucus Secreting Adenocarcinoma of Bladder. H. L. Kretschmer.—p. 754.
Subtotal Extirpation of Granulomatous Prostate. R. M. Nesbit and J. M. Lynn.—p. 766.
Evaluation of Preoperative Factors in Prostatic Surgery: Review of 404 Consecutive Cases. P. J. Kahle and P. L. Getzoff.—p. 775.
Effect of Neutron Radiation of Human Testes: Case Report. J. N. Robinson and E. T. Engle.—p. 781.

Laryngoscope, St. Louis

59:315-440 (April) 1949. **Partial Index**

Management of Carcinoma of Larynx. H. B. Orton.—p. 315.
*Role of Upper Respiratory Mucous Membrane in Pathogenesis of Poliomyelitis. W. L. Aycock.—p. 335.
Paralysis of Larynx Following Prophylactic Injection of Tetanus Antitoxin. H. Dintenfass.—p. 369.
Postnasal Discharge. B. L. Bryant.—p. 397.
Esophageal Varices and Their Treatment by Injection. J. F. Tolan. —p. 425.

Upper Respiratory Membrane and Poliomyelitis.—Aycock cites evidence that the risk of bulbar poliomyelitis following tonsillectomy most of the time in most places is almost nil but that for short periods of time in a few places (epidemics of poliomyelitis) it is a risk to be avoided if the operation can be delayed without inviting some more serious danger to health, whether or not it interferes with the convenience of the patient, the family, the hospital or the physician. From a comparison of the seasonal frequency of poliomyelitis in general and bulbar poliomyelitis following tonsillectomy, it can be inferred that there is a sort of "seasonal epidemic" in tonsillectomy, which happens to coincide closely with that of poliomyelitis. This, in a sense, tends to double the risk at the particular season and suggests that this favorite time for the operation, unless there be some distinct contraindication, be changed, for example, from late summer "before school opens" to early summer "after school closes," but before poliomyelitis begins. The author cites reports which indicate that the presence or absence of tonsils has a definite influence on the type of the disease which is to occur. In 46 families in which 2 or more cases occurred, it was found that in 17 of 25 bulbar cases tonsillectomy had been performed recently or previously, but in 76 spinal cases there had been only 10 tonsillectomies at any time previously. It is not meant to imply that the data in these surveys in any sense comprise any argument against tonsillectomy in general, but it is presented as a clear indication that the tonsil has a definite influence on the infectious process.

Medical Annals of District of Columbia, Washington

18:229-284 (May) 1949

Gynecomastia as a Diagnostic Sign. L. H. Kyle.—p. 229.
*Bacitracin Therapy in Pyogenic Infections of the Skin. F. J. Eichenlaub and M. A. Olivo.—p. 236.
Pathogenesis and Therapy of Radiation Illness. E. P. Cronkite.—p. 239.
Fractures of Neck of the Femur Due to Osteoporosis. M. C. Cobey. —p. 243.

Bacitracin in Skin Infections.—Eichenlaub and Olivo treated 50 patients with pyogenic dermatoses by local application of bacitracin. The antibiotic, a neutral, filtrable, water-soluble substance, was used either in form of ointment, 500 units per gram in a water-miscible base, or combined with starch and zinc oxide to form a paste. Patients were instructed to soften and remove the crusts of impetigo and ecthyma by soaking with boric acid solution, and after this the drug in ointment form was rubbed into the lesion. Patients with dermatoses associated with pronounced weeping were instructed to use boric acid compresses before applying the paste three times a day. The results in the treatment of 11 patients with impetigo and of 9 patients with ecthyma with bacitracin ointment were excellent, even dramatic on occasion. In secondary infections complicating various dermatoses in 18 patients, bacitracin acted rapidly in eliminating the pyogenic infection. Four of 6 patients with infectious eczematoid dermatitis were cured, and 2 were improved. Three of 6 patients with folliculitis barbae were improved, but the drug was ineffective in 3 others because of deeper folliculitis. An eczematous contact type of dermatitis occurred in 2 of the 50 patients. Reaction to a patch test was positive after eighteen hours in 1 of these. Forty-four of the 50 patients were definitely improved or cured in one to two weeks.

North Carolina Medical Journal, Winston-Salem

10:153-228 (April) 1949

Development of Modern Thoracic Diagnosis. W. L. Wells.—p. 159.
Surgical Treatment of Certain Congenital Malformations of the Heart and Great Vessels. W. C. Sealy.—p. 162.
Mycotic Infections in North Carolina. D. T. Smith.—p. 167.
Chemotherapy and Use of Vaccine in Infectious Asthma. O. C. Hansen-Pruss and H. A. King.—p. 175.
Results of Surgery in Bronchiectasis. J. D. Moody.—p. 178.
Cystic Lung Disease. E. E. Menefee Jr.—p. 184.
Present Day Use of Artificial Pneumothorax. J. S. Hiatt Jr.—p. 191.
Chest Injuries. C. E. Gardner Jr.—p. 193.
Acute Lye Poisoning in Children. G. Taylor and H. P. Brawner. —p. 198.
Surgical Management of Lye Strictures of Esophagus. A. B. Cecil Jr. p. 199.

Radiology, Syracuse, N. Y.

52:621-776 (May) 1949

*Medulloblastoma: Non-Operative Management with Roentgen Therapy After Aspiration Biopsy. C. B. Peirce, W. V. Cone, J. Bouchard and R. C. Lewis.—p. 621.
*Accuracy of Roentgen Diagnosis of Benign Gastric Ulcer. C. A. Stevenson and C. W. Yates.—p. 633.
Fibrous Dysplasia of Bone (Monostotic). P. O. Wells.—p. 642.
Parotid Tumors: Review of 93 Cases. M. J. Smith and K. W. Stenstrom.—p. 655.
Cavitary Form of Pulmonary Neoplasm. F. Isaac and R. E. Ottoman. —p. 662.
High-Kilovoltage Radiography. E. D. Trout, D. E. Graves and D. B. Slauson.—p. 669.
Cinefluorography: Progress Report on Technical Problems, Dosage Factors and Clinical Impressions. G. H. S. Ramsey, J. S. Watson Jr., T. B. Steinhausen and others.—p. 684.
Heart Measurement: Simplified Method. R. R. Meyer.—p. 691.
Retrogastric Space, Roentgenographically Considered. H. Lobsenz and R. R. Jauernig.—p. 701.
Mediastinal Emphysema Occurring During Acute Paroxysm of Bronchial Asthma. J. W. Gressman and O. S. Cramer.—p. 705.
Studies of Effect of Roentgen Rays on Healing of Wounds. III. Histological Changes in Skin Wounds in Rats Following Postoperative Irradiation with Very Small and Moderate Doses. E. A. Pohle, G. Ritchie and W. W. Moir.—p. 707.
Effects of Continuous Radiation on Chick Embryos and Developing Chicks. I. Growth Rate, Gonads and Bone. S. Warren and F. J. Dixon.—p. 714.

Medulloblastoma.—Peirce and co-workers employed the twist-drill technic to obtain tissue for histologic diagnosis in 16 cases of suspected cerebellar tumors in children. Aspiration biopsy should be done only after careful clinical and ventriculographic orientation of the suspected tumor site. The tissues obtained showed medulloblastomas in 5 instances, astrocytomas in 3 instances and glioblastomas in 2 instances. With this technic a high percentage of lesions in the posterior fossa can be identified positively and rapidly before deciding on the method of treatment. Differentiation of the medulloblastomas from the astrocytomas and other conditions which are better treated surgically permits immediate institution of roentgen treatment for medulloblastoma, thus eliminating the operative mortality and the time loss of a therapeutic trial of irradiation. The 5 children, 3 girls and 2 boys, between the ages of 19 months and 8 years, with medulloblastoma were poor surgical risks. Roentgen treatment was initiated immediately on diagnosis of medulloblastoma. An average tumor dose of 4,600 was delivered to the primary lesion in four weeks and an average of 1,500 to every level of the spinal axis in the following two weeks. Within seventy-two hours the response in 3 of the 5 patients was dramatic. They became able to feed themselves, were free of headache and, within a week, acted and behaved like normal children. The 2 others took two weeks to manifest the same degree of improvement. Ventricular taps were necessary in only 1 case, but not after the fifth day. In contrast to other methods of repeated and often incomplete irradiation at variable periods, "the maximum tolerable dose" should be delivered to the primary area and a considerable portion of such a dose as a prophylactic measure to every level of the spinal axis.

Roentgen Diagnosis of Benign Gastric Ulcer.—Stevenson and Yates report a series of 117 consecutive cases of gastric ulcers which were diagnosed roentgenologically as simple benign gastric ulcers. Of the 117 ulcers, 6 were located in the upper third of the stomach, 55 in the middle third and 56 in the lower third. Ninety-one patients have been followed adequately for periods of ten months to twenty years; in 85 of them (93.4 per cent) the lesions were proved to be benign by microscopic examination of tissue or subsequent roentgenologic examinations. The 6 cases in which the roentgenologic diagnosis was wrong represent an error of 5.1 per cent or a corrected error of 6.6 per cent of the 91 cases. On reviewing the roentgenograms and the fluoroscopic observations, the authors were unable to find any difference in the 6 malignant cases erroneously diagnosed as benign, as compared to the proved benign ulcers in this series. It is impossible, at any one roentgenologic examination, to definitely differentiate a gastric ulcer from a gastric carcinoma; but if adequate criteria for benignancy are kept in mind, this single procedure is about as accurate as any test in the field of medicine. Since it is known that a roentgenologic diagnosis of gastric carcinoma implies a poor prognosis, it may be wise to consider seriously immediate surgical treatment for all cases of roentgenologically diagnosed benign gastric ulcer, in the hope of early removal of the carcinoma in the approximately 10 per cent of cases in which the diagnosis is wrong.

Review of Gastroenterology, New York

16:281-368 (April) 1949

Palliative Operations for Gastric Cancer. G. T. Pack and G. McNeer. —p. 291.
Carcinoma of Thoracic Esophagus. H. R. Hawthorne and A. S. Frobese. —p. 322.
Peptic Ulcer: Theory and Practice. S. Weiss and J. Weiss.—p. 336.
Clinical Observations on Behavior of Foreign Bodies in Stomach. E. D. Palmer.—p. 349.

Rocky Mountain Medical Journal, Denver

46:345-428 (May) 1949

A Psychiatrist Looks at Compulsory Health Insurance. F. G. Ebaugh. —p. 364.
Trauma as Alleged Cause of Appendicitis in Compensation Cases. H. C. Thompson.—p. 367.
Prolonged Labor. E. J. DeCosta.—p. 371.
Fluid, Electrolyte and Protein Balance in Surgical Patient. C. L. Holmes.—p. 377.

46:429-520 (June) 1949

Observations Relating to Recently Proposed Legislation in Congress of the United States. J. W. Hannett.—p. 448.
Extrapleural Thoracoplasty Early in Caseopneumonic Tuberculosis. J. H. Forsee.—p. 452.
Combined Procedure of Vagotomy and Partial Gastric Resection in Treatment of Peptic Ulcer. F. F. Hatch, W. Nelson and T. C. Bauerlein. —p. 460.

South Carolina Medical Assn. Journal, Florence

45:65-106 (March) 1949

Diabetes and Tuberculosis. S. Jacobs.—p. 65.
Adrenal Medullary Tumor Syndrome (Pheochromocytoma): Case Report with Successful Operation. J. D. Nelson and G. B. Hodge.—p. 70.
Peritoneoscopy. C. Bunch.—p. 74.

45:107-146 (April) 1949

Tularemia Acquired from Bite of Wood-Tick: Case Report. R. Wilson Jr.—p. 107.
Rh Factor. C. H. Kingsbury.—p. 108.
Platybasia with Increased Intracranial Pressure. G. B. Hodge and H. Plenge.—p. 110.
Psychosomatic Medicine—A Critique. E. Ascher.—p. 113.

United States Naval Med. Bulletin, Washington, D. C.

49:199-406 (March-April) 1949. **Partial Index**

*Clinical Manifestations of Acute Radiation Illness in Goats: Comments on Therapy. E. P. Cronkite.—p. 199.
Osteosynthesis by Means of Spring Power. R. Maatz.—p. 234.
Bankart Operation for Recurrent Dislocation of the Shoulder. E. G. Edwards.—p. 244.
Medical Management of Cardiac Failure. A. H. Douglas.—p. 253.
Fatal Coronary Arteriosclerosis in Young Adults: Report of 2 Cases. V. E. Martens and R. F. Norris.—p. 259.
Coarctation of Aorta. P. H. Morton.—p. 265.
Infectious Mononucleosis. W. F. Berberich and F. H. Thomas Jr. —p. 271.
Humidity and Allergy: Observations in 150 Cases. P. H. Von Fraenkel. —p. 280.
Angioid Streaks of the Retina: Report of Case. A. J. Delaney and A. L. Rhoades.—p. 296.
Cryptococcus Meningitis: Report of Case. F. J. O'Neill, A. L. Newcomb and C. S. Nielsen.—p. 300.
Incarcerated Littre's Hernia. W. E. Klein.—p. 309.
Diffuse Peritonitis Secondary to Bacillary Dysentery. L. M. Zimmerman. —p. 313.
Inflammatory Tumor of Colon of Amebic Origin: Report of Case. D. P. Osborne.—p. 316.
Cholelithiasis in Childhood: Report of Case in a 15-Year-Old Girl. R. G. Franklin and H. Y. Hoffman.—p. 319.
Lumbar Vertebral Chordoma. K. P. Knudtson.—p. 322.
Neuroblastoma Arising in Thoracic Sympathetic Chain: Report of Case. B. H. Smith Jr. and W. H. Hall Jr.—p. 326.
Solitary Pelvic Ectopic Kidney. H. J. Cokely and R. N. Webster. —p. 333.

Acute Radiation Illness in Goats.—Cronkite says that during the air atomic bomb explosion at Bikini, goats were exposed to very high intensity, short duration gamma radiation and some were exposed to a lesser extent to fast and slow neutron radiation. The goats were protected by varying degrees of shielding. They were exposed to ionizing radiation in amounts ranging from 100 r to more than 10,000 r. Goats are divided into four groups on the basis of the severity of the illness and their leukocyte response to the radiation. Group 1, with the severest radiation illness, survived less than six days; an extremely severe depression of the leukocyte count developed. Sudden death was observed. There was no visible evidence of hemorrhage during life, and epilation was not seen. Group 2 survived nine to fifteen days. Signs were severe but appeared less rapidly. Definite hemorrhagic manifestations with a variable clotting defect occurred. Epilation was prominent. Group 3 had less severe radiation illness and survived in excess of forty-four days. Two animals were alive one and a half years after irradiation. The signs were similar to those in group 2, but they developed with less rapidity and severity. A moderate leukopenia was present. Hemorrhagic phenomena were less prominent, and a clotting defect was not found. Epilation was minimal. Group 4 had mild radiation illness and survived in excess of one hundred and eighty-four days. Six of 9 animals were alive one and a half years after irradiation. Signs were mild and of short duration. Hemorrhage, epilation and rhinitis were absent. The clinical picture in goats exposed to atomic bomb radiation is similar to that of man except for the absence of vomiting and the more rapid progression of signs. Early appearance and rapid progression of signs presages an early death. Penicillin and whole blood transfusions were used therapeutically. For lack of comparably exposed control animals, definite conclusions cannot be drawn about the usefulness of these agents. The data suggest that they may be of value.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine, Liverpool

43:1-116 (April) 1949. **Partial Index**

Investigations in Chemotherapy of Malaria in West Africa. VI. Suppressive Cure of Malaria by Sulphonamides. G. M. Findlay.—p. 1.
Post-Stilbamidine Neuropathy, with Reference to Retention of Drug in the Body. M. H. Sati.—p. 4.
Air Movement Under Mosquito- and Sandfly-Nettings. W. Koch and D. Kaplan.—p. 26.
Antimalarial Studies in Quinoline Series. A. Gray and J. Hill.—p. 32.
Comparative Efficiency of Various Methods of Infecting Mice with Schistosoma Mansoni. J. M. Watson and M. A. Azim.—p. 41.
Malarial Immunity in Africans: Effects in Infancy and Early Childhood. P. C. C. Garnham.—p. 47.
Outbreak of Sylvan Yellow Fever in Uganda with Aëdes (Stegomyia) Africanus Theobald as Principal Vector and Insect Host of the Virus. K. C. Smithburn, A. J. Haddow and W. H. R. Lumsden.—p. 74.

British Heart Journal, London

11:109-204 (April) 1949

*Arteriovenous Aneurysm of Lung. C. Baker and J. R. Trounce.—p. 109.
Heart Rate with Exercise in Patients with Auricular Fibrillation. J. A. C. Knox.—p. 119.
Calcified Aortic Valve: Clinical and Radiologic Features. C. E. Davis and R. E. Steiner.—p. 126.
Right Bundle Branch Block and Cardiac Infarction. P. Meyer.—p. 137.
Right Ventricular Stenosis (Bernheim's Syndrome). T. East and C. Bain.—p. 145.
Mitral Stenosis in Later Life. H. Cookson.—p. 155.
Circulation Times in Congenital Heart Disease. K. D. Allanby.—p. 165.
*Morbus Coeruleus: Study of 50 Cases after Blalock-Taussig Operation. C. Baker, R. C. Brock, M. Campbell and S. Suzman.—p. 170.

Arteriovenous Aneurysm of the Lung.—According to Baker and Trounce, arteriovenous aneurysm of the lung is not rare. They report 2 cases and discuss 29 previously reported cases. The authors' patients were a man aged 27 and a boy aged 13. The first patient was operated on but died thirty hours later. At the time of writing an operation had not yet been performed in the second case. Cyanosis from childhood or early adult life, clubbing and polycythemia are the most important features. Physical signs in the heart are uncommon, but a murmur may be heard in the chest, corresponding to the invariable finding of an opacity in a roentgenogram of the lungs. Associated vascular lesions in the skin, mucous membranes and, particularly, the lips are common. The cyanosis is slowly progressive and is followed by dyspnea, restricted activity and incapacity. Hazards to life are from anoxemia, polycythemia and hemorrhage from the aneurysm, rather than from heart failure. The commonest misdiagnosis is congenital heart disease when cyanosis develops in early life, as is common, but it may also be mistaken for polycythemia rubra vera if cyanosis first develops in adult life, or pulmonary tuberculosis when hemoptysis occurs with the undiagnosed roentgenographic opacity. It is successfully treated by removal of the aneurysm, by lobectomy or by pneumonectomy. Surgery carries a reasonable risk and is indicated in lesions large enough to cause cyanosis.

Morbus Coeruleus After Operation.—Baker and associates describe the method of choosing the first 50 patients for the Blalock-Taussig operation at Guy's Hospital and describe the results obtained. Three patients were thought to have tricuspid atresia with a nonfunctioning right venticle; all the others had Fallot's tetralogy, though sometimes with a known or suspected complication. All had great disability and severe or moderate cyanosis dating from birth or early infancy, with polycythemia and clubbing of the fingers. The prerequisite of a successful operation is that the disability and cyanosis should be mainly due to an inadequate blood flow to the lungs, and, in general, this is indicated by the clinical and radiologic findings that have been given. The other prerequisites are that there should be a suitable systemic artery and a pulmonary artery large enough for an adequate anastomosis. Angiocardiography helps with both these points. The operation was usually an end to side subclavian pulmonary anastomosis on the side opposite the aortic arch. Reasons were given for operating on the left side regardless of the side of the aortic arch, and this has become the usual routine. The immediate upset caused by the operation is less than might be expected, and children tolerate it well and recover quickly. Morphine should be used in small quantities only, and intravenous fluids are not needed in large amounts, though fluids should be taken freely by mouth before and after operation. Breathing exercises should be started at once and carried out vigorously. The only common complications are pulmonary—some collapse of the lung and pleural effusion. These generally clear up quickly. There were 7 deaths in these 50 cases. There were 3 others in which no anastomosis could be performed. Of the remaining 40, there were 3 in which the authors thought the improvement of little or no significance and 4 in which they classed it as only fair, though in 2 of these the result was excellent as far as the heart was concerned but was marred by some residual disability from thrombotic hemiplegia. In 33 of the 50 cases (66 per cent) the results were almost perfect.

Edinburgh Medical Journal

56:41-88 (Feb.) 1949

Diet and Dental Health. A. P. Meiklejohn.—p. 41.
Experimental and Clinical Use of Antihistamine Drugs. R. B. Hunter.—p. 54.
Essay on Reactions of Mesenchyme with Especial Reference to "Reticuloses." H. Russell.—p. 62.
Judgment in Cardiology. R. W. D. Turner.—p. 68.

Indian Medical Gazette, Calcutta

84:81-130 (March) 1949. **Partial Index**

*Evaluation of Testosterone Propionate Therapy in Cases of Angina Pectoris. Rustom Jal Vakil.—p. 83.
Tuberculous Pericarditis. Balbiv Singh.—p. 95.
Causes of Failure in Treatment of Amebic Dysentery. S. L. Malhotra.—p. 96.
Treatment of Filariasis by Lithium Antimony Thiomalate. S. Raju Ayyar.—p. 100.

Testosterone Propionate in Angina Pectoris.—Rustom Jal Vakil reviews results obtained with testosterone propionate in 125 cases of proved angina pectoris. He administered testosterone propionate in two weekly intramuscular injections of 25 mg. of an oily preparation for six to eight weeks. Of the 125 patients so treated, 33.6 per cent showed great improvement, 41.6 per cent moderate improvement and 24.8 per cent no improvement. Of all the patients with angina treated with testosterone, only 1 of every 4 failed to show some degree of improvement. The percentage of failures was somewhat higher in female than in male patients. The author emphasizes that treatment of angina pectoris with testosterone propionate is not a substitute for a reasonable or restricted mode of life and light diet, both of which remain fundamental to improvement, nor can one expect it to supersede the nitrites and other remedies when these are indicated.

Journal of Bone and Joint Surgery, London

31-B:157-320 (May) 1949

Scoliosis with Paraplegia. K. G. McKenzie and F. P. Dewar.—p. 162.
*Polyostotic Fibrous Dysplasia—Albright's Syndrome: Review of Literature and Report of 4 Male Cases, 2 of Which were Associated with Precocious Puberty. C. K. Warrick.—p. 175.
Types of Displacement in Fractures of Femoral Neck and Observations on Impaction of Fractures. P. Linton.—p. 184.
Treatment of Trochanteric Fractures of Femur. E. M. Evans.—p. 190.
Trochanteric Fractures of Femur: Plea for Conservative Treatment. R. C. Murray and J. F. M. Frew.—p. 204.
Bone Concavity Caused by Ganglion. G. R. Fisk.—p. 220.
Ischio-Femoral Arthrodesis of Hip by Posterior Open Approach. W. B. Foley.—p. 222.
Neurofibroma of Sole in Case of Von Recklinghausen's Disease. E. G. Herzog.—p. 227.
Skin Grafting by Cross-Leg Flaps. F. Braithwaite and F. T. Moore.—p. 228.
Pathology of Osteoclastoma or Giant-Cell Tumor of Bone. R. A. Willis.—p. 236.
Treatment of Giant-Cell Tumors of Bone: Review of 25 Cases. T. M. Prossor.—p. 241.
*Osteoclastoma: Study of 38 Cases. B. W. Windeyer and P. B. Woodyatt.—p. 252.
Treatment of Osteoclastoma by Radiation. F. Ellis.—p. 268.
Malignant Osteoclastoma and Association of Malignant Osteoclastoma with Paget's Osteitis Deformans. D. S. Russell.—p. 281.

Polyostotic Fibrous Dysplasia.—According to Warrick it was Lichtenstein who, in 1938, introduced the term polyostotic fibrous dysplasia to designate "a skeletal developmental abnormality affecting one, several, or many bones with a predominantly unilateral distribution." Reports of similar cases had occurred before, but under a variety of titles. Albright and others described the association of predominantly unilateral skeletal changes with pigmentation of the skin and with precocious puberty in females, and this syndrome now bears Albright's name. Warrick reports 4 cases of polyostotic fibrous dysplasia. All are males, all show cutaneous pigmentation, and in 2 there has been precocious puberty. This dysplasia is often confused with parathyroid osteodystrophy, and sometimes exploratory operations on the parathyroid glands are needlessly performed. This confusion should not arise if it were remembered that no general skeletal decalcification and no constant changes in the calcium or phosphorus levels of the blood occur in polyostotic fibrous dysplasia. No effective treatment has been discovered for this disease. Pathologic fractures and deformities may require treatment.

Osteoclastoma.—Windeyer and Woodyatt review 38 cases of osteoclastoma (malignant myeloid sarcoma). The lower limb was involved in 19 and in slightly over half the lesion was near the knee joint. The upper limbs were involved in 6 cases, and the other tumors were in the vertebrae, sacrum, mandible, scapula and ischium. Because of an assumed close association between trauma and the development of osteoclastoma, particular attention was given to this factor in the cases under review, and it was found that in 7 there was evidence of a blow causing pain and bruising and, after some months, pain and swelling at the same site at which osteoclastoma was later discovered. In 4 others there was a less definite history of a fall or strain some months before the onset of symptoms. In 27 patients there was no history of a preceding injury. It is often difficult to arive at a diagnosis on clinical and radiographic observations alone. Histologic information is usually necessary. A limited biopsy is safe and reliable. Malignant change with the development of metastases occurs in a small proportion of cases, regardless of the treatment that has been employed. Treatment included curettage or local excision, with or without radiation, and radiation alone. The patients treated by curettage or excision were dealt with during an earlier period than those treated by irradiation alone, and an exact comparison of results is not possible. The follow-up of patients treated by radiotherapy alone is too short to exclude the possibility of recurrence, but the immediate results seem better than those of surgical treatment. In this limited series malignant change occurred in a higher proportion of cases with treatment by curettage and radiotherapy than in those with treatment by radiotherapy alone, and it appears that radiotherapy alone is the treatment of choice.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

56:181-340 (April) 1949. Partial Index

Period of Gestation. H. H. Knaus.—p. 181.

Measuring Obstetric Value of Pelvis (Use of "Graph Method" for Interpretation of Radiologic Finding). J. C. Moir.—p. 189.

Traumatic Neuritis of Puerperium. J. A. Chalmers.—p. 205.

Nutritional Survey in Pregnancy with Particular Reference to Certain Hematologic and Biochemical Findings. W. Hobson, F. J. W. Lewis and D. Woodman.—p. 217.

Obstetric Capacity of Undilated Cervix. T. B. FitzGerald.—p. 229.

Combined Full-Time Intra- and Extra-Uterine Pregnancy with Survival of Mother and both Children. E. A. I. Fejer and G. H. Henry. —p. 240.

Significance of Clostridium Welchii in Cervical Swab and Blood-Stream in Postpartum and Postabortum Sepsis. A. M. Ramsay.—p. 247.

*Treatment of Secondary Amenorrhea with Low Dosage Irradiation of Ovaries and Pituitary Gland. P. L. Playfair and A. Booth.—p. 260.

False Vagina Formed by Coitus. G. P. Charlewood.—p. 269.

Irradiation of Ovaries and Pituitary in Secondary Amenorrhea.—Playfair and Booth report 21 cases of secondary amenorrhea treated with low dosage irradiation of the ovaries and pituitary gland. Their definition of a case of secondary amenorrhea is one in which a period has occurred but in which there has been at least four months of amenorrhea. In the majority of the 21 cases the duration of amenorrhea was longer than four months. In each case high voltage therapy was used, consisting of 200 kilovolts at 15 milliamperes with a filtration of 1.5 mm. of copper and 1 mm. of aluminum, the focal skin distance for each field being 50 cm. The ovaries were treated by means of right and left anterior and posterior fields, with 15 by 15 cm. applicators. The pituitary gland was treated by means of a central field on the forehead, 6 by 8 cm., aimed at the sella turcica. On the first day the right and left anterior pelvic fields were each given 75 r. The pituitary field received 75 r. On the seventh day the right and left posterior pelvic fields were given 75 r each. On the fourteenth day, as on the first, the right and left anterior pelvic fields were each given 75 r and the pituitary field 75 r. In 14, or two thirds of the 21 patients, a normal periodicity was established after irradiation and had continued as of the time of reporting. In 2 the periodicity was improved, and in 5 the treatment was considered to have failed. Only patients who were clinically well were subjected to the treatment. In cases of doubt as to pregnancy, a biologic test was carried out; treatment was not given to pregnant women. Patients under 16 or over 40 were not treated. It appeared that the success depended somewhat on the degree of development of the genital tract. Treatment was most successful in patients in whom the tract from the external os to the fundus uteri was at least 1½ inches (4 cm.). This measurement was adopted in attempting to estimate the degree of hypoplasia.

Journal of Tropical Medicine and Hygiene, London

52:67-86 (April) 1949. Partial Index

Tropical Ulcer in British Somaliland. P. B. Adamson.—p. 68.

Dysentery Associated with Malaria. J. I. Roberts.—p. 76.

52:89-110 (May) 1949

Treatment of Amebic Liver Abscess with Chloroquine. P. Manson-Bahr. —p. 91.

Mass Suppression with Chloroquine; Chloroquine and Pentaquine; and Neo-Premaline. R. B. Wallace.—p. 93.

Lancet, London

1:849-894 (May 21) 1949

Natural History of Poliomyelitis. B. W. Lacey.—p. 849.

Antipeptic and Antacid Therapy with Special Reference to Adsorbent Complexes of Calcium and Magnesium Phosphates. N. Mutch.—p. 859.

*Procaine Penicillin. M. Y. Young, G. W. S. Andrews and D. M. Montgomery.—p. 863.

Procaine Penicillin in Infants and Children. W. M. Wilson, J. W. Farquhar and I. C. Lewis.—p. 866.

Chloromycetin in Typhoid Fever. W. H. Bradley.—p. 869.

Procaine Penicillin.—Young and associates tested various compounds of procaine penicillin to find a repository preparation which would insure a blood penicillin level of 0.06 units or more per cubic centimeter at twenty-four hours after a single small injection. Three preparations were used: (1) procaine penicillin in peanut oil; (2) procaine penicillin in water and (3) procaine penicillin in peanut oil with aluminum stearate. The oily preparations, with or without aluminum stearate, were issued in 10 cc. ampules containing 300,000 units of penicillin per cubic centimeter. The preparations which were supplied in the form of a dry powder contained 300,000 units per cubic centimeters after the addition of 10 cc. of water. The total number of persons treated was 185. Procaine penicillin G in oil with aluminum stearate was superior to other preparations tested for delaying absorption of penicillin. It is a stable preparation that is easy to administer and causes no pain or undesirable side effects. In a dose of 300,000 units it gave therapeutic blood penicillin levels for twenty-four hours in virtually 100 per cent of patients. Tests with oil and water suspensions of procaine penicillin, without aluminum stearate, have shown that with a dose of 600,000 units 100 per cent of patients had a therapeutic blood penicillin level at the end of twenty-four hours; with a dose of 300,000 units only 50 to 60 per cent attained this level. A few patients received a single dose of 2,000,000 units of procaine penicillin with aluminum stearate in oil, and most had a therapeutic blood penicillin level for a week after injection. A preparation of procaine penicillin in oil with aluminum stearate together with soluble penicillin combined the advantages of rapid initial absorption and delayed action. Procaine penicillin G in oil with aluminum stearate is the most suitable preparation for clinical use where economy in material, slow absorption and a long-lasting therapeutic level in the blood of penicillin is important.

Quarterly Journal of Medicine, Oxford

18:*81-172* (April) 1949

Massive Dilatation of Left Auricle. R. Daley and R. Franks.—p. 81.
Primary Optic Atrophy in Von Recklinghausen's Disease (Multiple Neurofibromatosis). E. Dresner and D. A. D. Montgomery.—p. 93.
Marchiafava Micheli Syndrome (Paroxysmal Nocturnal Hemoglobinuria). J. Marks.—p. 105.
Ocular Manifestations of Polyarteritis Nodosa. R. N. Herson and R. Sampson.—p. 123.
Cushing's Syndrome and Thymic Carcinoma. D. Hubble.—p. 133.
Clinical and Pathologic Study of Renal Disease: Part I. Nephritis. J. Davson and R. Platt.—p. 149.

Acta Medica Orientalia, Jerusalem

8:1-32 (Jan.-Feb.) 1949

Manifestations of Shock in Fundus of Eye. J. Landau, Y. M. Bromberg, D. Birnbaum and A. Feigenbaum.—p. 1.
Psychosomatic Factors in Adjustment of New Immigrants. A. A. Weinberg.—p. 13.
*Inbreeding and Several Other Factors in Diabetes Mellitus of Jews. E. Lyon.—p. 20.
Death Certification. G. Kallner.—p. 24.

Diabetes Mellitus in Jews.—Lyon believes that inbreeding explains the higher heredofamilial occurrence of diabetes in Jews. Probably inbreeding also accounts for the frequency of diabetes in Jewish women beyond the age of 45. Joslin felt that the onset of diabetes depends on a complex of endocrine events which are controlled by recessive mendelian genes. Inbreeding also increases the number of those homozygotic hereditary factors. That means increased mendelian ratios of recessive endocrine disturbances, especially during and after the menopause—a period during which the manifestation of the disease is apparently particularly likely to occur. The majority of authors are now of the opinion that secondary factors play a prominent part in the manifestations of diabetes. The author stresses the tendency to obesity in Jews. "Outbreeding" should be advised. Every descendant from a diabetic "sib" should be advised to avoid marriage with a near or even distant relative or with members of an equally tainted family.

Archives des Maladies du Coeur, Paris

42:97-196 (Supplement 1) 1949

Study of 200 Cases of Tetralogy of Fallot. E. Donzelot, R. Heim de Balsac, A. M. Emam-Zadé and others.—p. 98.
*Eisenmenger's Syndrome; Study of 29 Cases. E. Donzelot, A. M. Emam-Zadé, R. Heim de Balsac and M. Kolosy.—p. 138.
Study of Volumetric Increase of Pulmonary Artery in a Series of 314 Cases of Congenital Cardiopathies. E. Donzelot and Associates.—p. 167.

Eisenmenger's Syndrome.—Donzelot and co-workers report 29 cases of Eisenmenger's syndrome from a series of 314 cases of congenital cardiac disease, 200 of which presented tetralogy of Fallot. Of the 29 patients 15 were male and 14 female, 8 between the ages of 2 and 10 years, 6 between the ages of 10 and 20 and 5 between the ages of 20 and 26. Cyanosis appeared within the first days of life in 11 patients, before the age of 2 years in 4 patients, between the ages of 2 and 10 years in 6 patients and between the ages of 11 and 18 years in 4 patients; except for the last 4, the cyanosis appeared early in life; it was progressive in all the patients. A systolic murmur was present in 26 patients, in 2 of whom it was accompanied with a diastolic murmur. In 3 patients an isolated, left laterosternal diastolic murmur was heard in the absence of peripheral signs of aortic regurgitation. The volumetric increase of the pulmonary artery varied considerably on roentgenologic examination. Rhythmic pulsation was constant; it was pronounced in 14 cases and less *pronounced in 15 cases. The volume of the* aorta was not reduced in any of the 29 cases. Angiocardiography was performed on 7 patients in whom diagnosis was uncertain. It was decisive in clarifying the diagnosis by confirming considerable enlargement of the pulmonary artery. Simultaneous and early *opacification of the aorta and of the pulmonary* artery revealed that the arteriovenous shunt was due to an intraventricular communication with the aorta displaced to the right. This diagnostic method is of paramount importance because it constitutes a contraindication to the Blalock-Taussig operation.

Gynaecologia, Basel

127:*273-336* (May) *1949.* **Partial Index**

Effect of Novocaine in Reaction of Uterus to Ecbolic Hormone of Posterior Pituitary. J. Botella Llusia and A. Maldonado del Castillo.—p. 273.
*Silent Hemolytic Disease of Newborn. S. I. de Vries.—p. 285.
Transplantation of Amniotic Membrane in Congenital Aplasia of Vagina. M. Kosowski.—p. 298.

Silent Hemolytic Disease of the Newborn.—The object of this study by de Vries was to investigate whether or not a Rhesus antagonism between mother and child might affect the blood picture of the newborn in other than proved cases of erythroblastosis fetalis. Obvious cases of this disease were excluded from this study. The author made hematologic studies in 70 apparently healthy full term Rh-positive newborn infants, showing a Rhesus antagonism with the mother. The hematologic results in first-born children and in the later offspring have been reported and compared with those of a control group of 115 normal full term newborn infants who did not show this antagonism. Based on the blood examination of newborn and the serologic examination of the mothers, the author concludes that characteristic hematologic changes may appear. These changes are considered the result of an immunization of the mother with the Rhesus antigen by the placental route. In the child a picture compatible with acute hemolytic anemia may be produced. A correlation between the serologic changes in *the mother and the abnormal blood picture in the child could* not be demonstrated. The frequency of these cases of silent hemolytic disease of the newborn due to a Rhesus antagonism has been calculated to be approximately 2 per cent of all births. A clinically fully developed case of erythroblastosis fetalis *occurs about once in 400 deliveries.*

Klinische Wochenschrift, Heidelberg

27:249-288 (April 15) 1949. **Partial Index**

Methods of Investigation in Occupational Diseases. L. Teleky.—p. 249.
Modification of Action of Histamine. K. Böhm and F. Jung.—p. 264.
*Morphology of Alloxan Diabetes. W. Bargmann and W. Creutzfeldt.—p. 268.
Hypertension Produced by Blockage of Spinal Nerves. H. Lampen, P. Kezdi and L. Kaufmann.—p. 272.
Nucleotide Content of Blood of Healthy Persons and of Patients with Leukemia. H. Niemer and Edith Stadler.—p. 278.

Morphology of Alloxan Diabetes.—Bargmann and Creutzfeldt point out that even before the discovery of alloxan diabetes the beta cells of the islands of Langerhans were regarded as the secretors of insulin. This theory is corroborated by the fact that the islet tumors accompanied by hypoglycemia consist chiefly of beta cells. The last doubt regarding the specific endocrine activity of the beta cells is removed by the observation that alloxan does not destroy the pancreatic islands in their entirety but only causes necrosis of the beta cells. This observation opens a new field for investigation on the islet apparatus and may perhaps shed light on the function of the alpha cells. It has been suggested that the alpha cells are immature or quiescent forms of the beta cells, whereas it is also assumed that the alpha cells secrete a substance that is involved in the metabolism of fat. Bergmann and Creutzfeldt reasoned that if alpha cells were quiescent beta cells they ought to undergo transformation into beta cells when the beta cells have been largely destroyed under the influence of alloxan. *They describe studies on 28 dogs which they had subjected to* intravenous injection of alloxan. They found that the insular apparatus of dogs treated with alloxan showed no signs of transformation of alpha into beta cells, nor were there signs of sprouting or increasing of the "clear cells" of Feyrter. Thus *there is no evidence that alpha cells may eventually develop* into beta cells. The authors believe that the alpha cells probably excrete some as yet unidentified endocrine substance. Variations in the number of the exocrine argentaffine cells of the pancreas, which may not form a uniform group, cannot be definitely explained as yet. These glands were investigated in the dogs with alloxan diabetes in order to obtain information about the relationship of the insular apparatus of the pancreas to other endocrine glands. Regressive changes were observed not only on the exocrine tissue of the pancreas but also in the *liver, the parotid glands and the testes (atrophy). Adrenals* and thyroid were free from pathologic changes, but unusual dark (hyperchromatic) cells were found in the parathyroids of a dog with alloxan diabetes. The authors also noted that the administration of alloxan frequently produced a necrotic nephrosis in dogs. This suggests that it is not advisable to administer alloxan in the treatment of tumors of the insular apparatus. The pancreatic and other changes indicate that alloxan is a cellular rather than a capillary toxin.

Medizinische Monatsschrift, Stuttgart

3:1-80 (Jan.) 1949. Partial Index

Rheumatic Genesis of Hallux Valgus. K. T. Schuknecht.—p. 1.
Organic Disorders as Manifestations of Psychic Disturbances. W. Seitz.—p. 13.
Roentgen Diagnosis in Central Nervous System. H. Jantz.—p. 22.
Treatment of Hyperthyroidism with Particular Consideration of Modern Thyrostatic Drugs. H. Braun.—p. 32.
Observations in 18 Fatalities Resulting from Arsphenamine. F. Legler.—p. 40.
*Injurious Effects of Cigaret Smoking in Women. P. Bernhard.—p. 58.

Injurious Effects of Cigaret Smoking in Women.—Bernhard shows that nicotine acts particularly on the sympathetic nervous system and on the capillary system, which are interrelated through the autonomic regulation of the vasomotors. Both systems are influenced by the neurotropic and angiotropic effects of the toxin of nicotine. The ion milieu and colloidal conditions are influenced by way of the sympathetic and autonomic nervous systems and the endocrine system. The cells of the female organism, and particularly the nervous and vascular systems, have a greater reactivity and are more susceptible to toxin than those of the male organism. The author made comparative observations in the course of twenty years on 458 women who were habitual smokers and on 5,000 women who did not smoke. Both groups had about the same environment, and all were receiving medical care. Disorders of the thyroid were nearly 7 times as frequent in those who smoked than in those who did not; 152, or 33.1 per cent, had hyperthyroidism, and nearly 7 per cent had hypothyroidism, whereas in the nonsmokers these percentages were 5.4 and 0.4 per cent, respectively. Other endocrine glands are unfavorably influenced by way of the thyroid, particularly the ovaries. Menstrual disturbances were present in over 36 per cent of the smokers, compared to slightly over 13 per cent in the nonsmokers. The incretory dysfunction produced by cigaret smoking may produce sterility. Nicotine reduces the libido. Symptoms of premature aging were observed in more than two thirds of the smokers, compared with less than 4 per cent of the nonsmokers. Premature menopause occurred in more than a fifth of the smokers compared with less than 2 per cent of the nonsmokers. Signs of virilism were also much more frequent in the women who smoked than in those who did not smoke. Smoking may in some cases elicit the eclamptic symptom complex. Statistical proof is available that the habit of cigaret smoking may cause abortions as well as premature births.

Ugeskrift for Laeger, Copenhagen

111:259-292 (March 10) 1949

Streptomycin. Determination of Resistance. Apportionment and Application of Streptomycin. K. A. Jensen.—p. 259.
Streptomycin Treatment of Tuberculosis. Preliminary Report on Treatment of 70 Patients. G. Bindslev and H. Mørch.—p. 271.
Treatment of Tuberculous Empyema. Preliminary Report. G. Bindslev and K. A. Jensen.—p. 276.
*Sensitivity to Streptomycin in Hospital Personnel. P. V. Marcussen.—p. 277.

Sensitivity to Streptomycin in Hospital Personnel.—Marcussen reports that systematic patch testing of 143 nurses giving streptomycin to patients revealed 20 cases of clinical hypersensitivity to the drug, including 6 cases of characteristic eczema. A definite relationship appeared to exist between the percentage of hypersensitivity and the degree of exposure. There were only 2 cases of hypersensitivity among the 107 nurses who had given less than one hundred streptomycin injections, 18 cases among the 36 who had given over two hundred injections and 12 cases among the 14 who had given over three hundred injections. There should be careful instruction about the danger of exposure to streptomycin. Rubber gloves should be worn, and syringes and other apparatus should be labeled and reserved for use with streptomycin. Treatment of a person hypersensitive to the drug will probably be impossible. One of the 6 cases of eczema illustrates the results of an acquired epidermal sensitivity on later application of streptomycin.

111:293-334 (March 17) 1949. Partial Index

Early Diagnosis of Primary Bronchogenic Carcinoma. A. V. Møller and F. Raaschou.—p. 293.
*Roentgen Diagnosis of Bronchogenic Carcinoma. F. Møller.—p. 303.
*Treatment and Early Diagnosis of Bronchial Cancer. J. L. Hansen.—p. 307.
Bronchoscopy in Bronchogenic Carcinoma. C. M. Smidt.—p. 313.

Roentgen Diagnosis of Bronchogenic Carcinoma.—Roentgen diagnosis, Møller states, is the first step in the diagnosis of a bronchial tumor. In about 96 per cent of the cases the first roentgenologic sign is atelectasis. In some instances a localized emphysema may point to a tumor. Roentgenologic changes which suggest the presence of bronchial cancer cannot on routine examination be said to be pathognomonic for cancer and require other special examinations to establish the diagnosis. With delay in diagnosis the time for favorable radical intervention may be missed. The average length of life after the establishment of diagnosis of a lung tumor is seven months. Not a few tumors of the lungs constitute accidental observations in mass screenings for tuberculosis, and many patients are referred to hospitals or lung surgeons for further examination.

Treatment and Early Diagnosis of Bronchial Carcinoma.—Hansen says that bronchial cancer has no typical or grave clinical symptoms in the early stages. All patients with symptoms which cannot be assigned to a verified disease should be examined. Men over 40 especially should be suspected, but the 10 per cent of lung cancers in women and the 5 per cent in younger men should also be discovered. Roentgen examination of the lungs is the first step. The pictures must be good and their evaluation exact. A normal roentgenogram does not exclude cancer. Roentgen examinations must be supplemented by bronchoscopy. The examination should be made on wide indications. The third point in the program is examination of secretions from the bronchi for tumor cells. Negative results call for several examinations. A negative result does not exclude cancer. Roentgen examination, bronchoscopy and cytologic examination of the expectorate constitute the main cornerstones in the early diagnosis of bronchial cancer. None of the methods is sufficient in itself. Often all must be performed before bronchial cancer can be excluded. The fourth examination, exploratory thoracotomy, is applied in cases with suspicious roentgen findings without histologically or cytologically established diagnosis. If cancer is found the operation is continued as a pneumonectomy if possible. If there is not cancer, there is almost always a lung disorder which calls for operative treatment and the thoracotomy is not superfluous. In only a couple of cases in far over 100 exploratory thoracotomies were there disorders from which recovery might have followed without the operative intervention. A special type of examination for pulmonary cancer is control of patients with pneumonia and influenza after apparent recovery. In examinations for bronchial cancer the patient can as a rule be ambulant. In the absence of thoracosurgical clinics the examinations must be made with the cooperation of different specialists and as always the medical practitioner.

111:391-416 (April 7) 1949

Ambulant Roentgen Diagnosis of Cancer in Alimentary Tract and Kidneys. J. Aaquist.—p. 391.
Treatment of Migraine with Dihydroergotamine. T. Dalsgaard-Nielsen.—p. 398.
*Late Cases of Aplastic Anemia Following Treatment with Sanocrysin. Treatment with BAL (2,3 Dimercaptopropanol). P. Bastrup-Madsen.—p. 400.

Late Cases of Aplastic Anemia Following Treatment with Sanocrysin.® Treatment with BAL (2,3 Dimercaptopropanol).—In the 2 fatal cases of aplastic anemia due to gold therapy reported by Bastrup-Madsen the symptoms set in two and five months, respectively, after the end of treatment with gold and sodium thiosulfate (sanocrysin®). In one case BAL was used, but because of difficulty in procuring the drug the treatment was not started till two months had elapsed. The total number of published cases is now 22.

Book Notices

New Hope for the Handicapped: The Rehabilitation of the Disabled from Bed to Job. By Howard A. Rusk, M.D., Professor and Chairman of the Department of Rehabilitation and Physical Medicine, New York University College of Medicine, and Eugene J. Taylor, Instructor, Department of Rehabilitation and Physical Medicine, New York University College of Medicine, New York. Foreword by Bernard M. Baruch. Cloth. Price, $3. Pp. 231. Harper & Brothers, 49 E. 33d St., New York 16, 1946-1949.

Physicians are becoming increasingly aware of the fact that responsibility to their patients does not end with immediate treatment of a specific illness or disability. Many chronic diseases and irremediable handicaps require of their victims a social, vocational and economic adjustment in which the physician is called on to participate to the fullest extent of his knowledge and experience. There is a broad and varied series of technics, grouped together under the term "rehabilitation," which is available to help the physician realize his greatest usefulness; authors Rusk and Taylor describe these technics fully and clearly in their book.

While valuable also as a manual of rehabilitative procedures, the book will be of incomparable benefit to the average physician even if it merely calls his attention to the fact that these procedures exist. Private and public rehabilitation agencies report that only about 2 per cent of referrals come from physicians; many handicapped persons stumble through life under heavy but frequently needless physical and economic burdens simply because they do not know that help is available or where to get it. "New Hope for the Handicapped" educates both physician and layman to the potentialities of the handicapped by a thorough analysis of what rehabilitation is and what it can do.

A complete history of rehabilitation during World War II is included, and one shares with the authors the desire to see the splendid facilities presently offered military and veteran handicapped made available to the far larger numbers of civilian disabled. As more and more doctors begin thinking in terms of rehabilitating "the whole man," the objectives expressed in this book will come closer to realization.

The Epitome of Andreas Vesalius. Translated from the Latin with Preface and Introduction by L. R. Lind, Ph.D., University of Kansas, Lawrence, Kans. With Anatomical Notes by C. W. Asling, M.D., Ph.D., and a Foreword by the Late Logan Clendening, M.D. Publication No. 21, Historical Library, Yale Medical Library. Cloth. Price, $7.50. Pp. 103, with 27 facsimile pages including reproductions of the 13 original illustrations. The Macmillan Company, 60 5th Ave., New York 11, 1949.

The late Dr. Logan Clendening remarks in his forward, "Here, indeed is the epitome of one of the greatest works on science ever to be written; one of the foundations of modern civilization." Osler had made similar remarks previously about the Fabrica.

Throughout the history of medicine, it is amazing that such an outstanding book as the Epitome should have been neglected by English translators. There were immediate translations into German and Dutch, but today there is no other translation in a modern tongue. Professor Lind is to be highly complimented for such a fine translation. The format of the book is excellent and contains the Latin text with all the meticulous woodcuts of the original, illustrating the compendium.

It was Vesalius' intention that the Epitome be a compendium —a brief descriptive anatomy. He wished this book to have as wide circulation as possible; to serve the medical profession as well as others interested in the human body. The mere fact that there are only twenty known originals available today attests the wide use the Epitome had. The present translation is faithful to the Latin text. It uses an American idiom, with modern technical phraseology.

The Fabrica and the Epitome were both published in 1543. This date marks the beginning of modern objective science, especially anatomy. "Humanist, artist, and naturalist, Vesalius fused in the fierce intellectual fires of the Sixteenth Century the old traditional science with the new art of the Renaissance to alloy a work of great creative genius, the influence of which has been such as to leave his name indelibly imprinted upon almost every structure of the human body and, in some part on the canvas of the countless artists." Modern anatomy still follows a great deal of Vesalian thinking and presentation.

The present volume is publication no. 21, Historical Library, Yale Medical Library. The book is dedicated to the late Logan Clendening, professor of history of medicine, University of Kansas. Not only will this book be of value to the student of the history of medicine, but to all those interested in morphology in all its aspects.

The translator's introduction presents the life and work of Vesalius in a brief but fascinating manner. A discussion of the Epitome is treated critically. The bibliography is not extensive, but references lead one to all that is known about Vesalius, especially Harvey Cushing's "A Bio-Bibliography of Andreas Vesalius." "Vesalius to the reader" precedes the dedicatory letter to Prince Philip. The present translation carries with it excellent anatomic notes by C. W. Asling appended to the end of each chapter.

The Epidemiology of Hemolytic Streptococcus During World War II in the United States Navy. By Alvin F. Coburn, M.D., and Donald C. Young, M.D., Medical Director, Communicable Disease Service, Herman Kiefer Hospital, Detroit, Mich.. Cloth. Price, $4. Pp. 229, with illustrations. Williams & Wilkins Company, Mt. Royal and Guilford Aves., Baltimore 2, 1949.

This monograph was compiled from statistical data and graphs and reports from epidemiology units written during World War II which were obtained from the Bureau of Medicine and Surgery of the Navy Department. The monograph is divided into 22 chapters and contains a glossary and bibliography. The study is concerned with streptococcic diseases as they occurred in the four war years among more than 3,000,000 young Americans. It comprises clinical and bacteriologic observations from naval stations located in every section of the United States. The spread of hemolytic streptococci is traced from man to man in barrack, from barrack to dispensary and from dispensary to all barracks of a camp, from the camp to a naval hospital, from the hospital to all camps on a station and from a station to other naval activities throughout the United States. Although much of the information was previously known, some new facts were brought to light. This study emphasizes many factors which must be taken into account in devising rational measures for the prevention of air-borne streptococcic epidemics.

The geographic location of the Naval Training Center was found to be important; the more northerly the center, the greater the expected risk of streptococcic epidemics. Streptococcic infections were extremely important as a cause of illness and were traced to certain strains of hemolytic streptococci which were highly pathogenic and possessed a capacity to spread. The magnitude of the problem may be understood when it is realized that there were at least 1,000,000 cases of streptococcic disease of the respiratory tract with over 50,000 cases of scarlet fever and over 40,000 cases of rheumatic fever, rheumatic heart disease and acute polyarthritis.

This book is interesting reading and should prove helpful to the physician in understanding some of the numerous factors involved in the spread of air-borne diseases.

Present Concepts of Rehabilitation in Tuberculosis: A Review of the Literature 1938-1947. By Norvin C. Kiefer, M.D., M.P.H., Senior Surgeon, United States Public Health Service. Cloth. Price, $3.50. Pp. 398. Supply Service, National Tuberculosis Association, 1790 Broadway, New York 19, 1948.

This summary of Dr. Kiefer's book on rehabilitation in tuberculosis can best be described as a "review of a review." In this book the author has recorded in an encyclopedic fashion all the available information concerning the subject at hand. The material is gleaned from more than 1,000 references. The book is divided into 16 chapters. The first chapter provides an introduction to the subject, while the last chapter contains the conclusions and editorial comment of the author, with his suggestions for rehabilitation in the future. In the intervening 14 chapters the experiences and opinions of the many writers in the field are described.

After a brief account of the history of rehabilitation programs in tuberculosis and an effort to define the terms under discussion, the author presents an impressive array of public and private agencies which are concerned with the rehabilitation of tuberculous persons. In addition, the rehabilitation projects of many institutions are listed. Of particular importance are the Office of Vocational Rehabilitation of the Federal Security Agency, the Rehabilitation Service of the National Tuberculosis Association and the Tuberculosis Control Division of the United States Public Health Service. These three agencies collaborated in a Conference on Rehabilitation of the Tuberculous in Washington in March 1946. The rehabilitation facilities of the Veterans Administration also deserve special comment.

A lengthy discussion of types of programs is presented. It is said that rehabilitation should begin within the sanatorium. Subsequent programs usually are carried out by state agencies but may be fostered by insurance companies, industry or labor unions. Tuberculosis colonies, such as the Papworth Colony in England, and workshops are discussed. The selection of patients for rehabilitation services and the types of work suitable for such persons are subjects reviewed by the author. The selection and training of personnel for rehabilitation staffs is an important problem, and it is dealt with in some detail. Likewise, the cost of rehabilitation is considered. Special subjects are reviewed, such as the disposition of specimens of sputum containing organisms, maximal benefit cases, the handling of patients who leave the sanatorium against advice and the many psychologic problems which arise in the treatment of tuberculous patients.

Obviously, much basic research is needed to solve the many problems of rehabilitation. In his editorial comment the author stresses the magnitude of the whole project and the need for coordination on the part of all agencies and organizations concerned with rehabilitation in tuberculosis. Proper development and utilization of all facilities not only will contribute to the patient's physical, mental, social, vocational and economic welfare but will also lead to ultimate eradication of tuberculosis.

International Digest of Health Legislation. Vol. 1, No. 1. *Paper.* Price, $1.25; 6s.3d. Pp. 144. World Health Organization, 350 5th Ave., New York 1; Palais des Nations, Geneva, 1948.

This publication, the first number of the "International Digest of Health Legislation," is the successor to the public health section of the *Bulletin Mensuel de l'Office International d'Hygiene Publique,* the duties and the functions of which office were transferred to the World Health Organization by act of the governments represented at the International Health Conference in New York on July 22, 1946. The technical reports and communications previously appearing in the *Bulletin* will be included in the *Bulletin of the World Health Organization.* The Digest will consist of reprints and translations of, or extracts from, the texts of the more important laws and regulations dealing with public health and related subjects adopted in different countries. Volume 1, no. 1, makes a good start by including such subjects as regulations for the registration of nurses in Australia, regulation of masseurs in France, regulation of medical practitioners in Southwest Africa and regulations pertaining to school health in the United Kingdom (Scotland). Reading of the 1947 decree relative to medical ethics in France is most interesting because of the section on "Duties of Doctors in Regard to Social Medicine." Persons interested in the administrative and legislative aspects of public health will find the Digest valuable.

Ciáticas vertebrales. Por V. Bosch Olives, cirujano ortopédico del Hospital de la Santa Cruz y San Pablo, Barcelona. Cloth. Pp. 164, with 36 illustrations. José Janés, Muntaner, 316, Barcelona, 1948.

This is a well conceived manual on the etiology and classification of the various causes of sciatica, dealing especially with the intervertebral spaces and foramens, and the pathologic processes which may affect the nerves of the lumbar region. The material is taken from the service of orthopedic surgery of the Hospital de la Santa Cruz and San Pablo in Barcelona. One hundred cases have been selected; in 60 there were lumbosacral manifestations without irradiation and in 40 with the sciatic syndrome. The illustrations consist of numerous line drawings and an appendix of about twenty-four fine illustrations of various lesions of the lumbosacral region.

Röntgendiagnostik des Herzens und der grossen Gefässe. Von Prof. Dr. Erich Zdansky, Vorstand des Zentral-Röntgeninstitutes am allgemeinen Krankenhaus in Wien. Second edition. Paper. Price, $18.60. Pp. 434, with 397 illustrations. Springer-Verlag, Mölkerbastel 5, Vienna 1, 1949.

The second edition of this classic monograph is welcome since it represents the mature consideration of one of the world's authorities in the field of the cardiovascular roentgenology. The new edition has afforded the author the opportunity to eliminate some obsolete material and to introduce more recent concepts. The shadow of the late war is apparent however, for example, when one glances through the bibliography, which shows a paucity of communications since 1940. Only in the case of angiocardiography, which is briefly handled in the addendum, has the author presented the newer trends outside the Central European countries. The illustrations are numerous and illuminating. The reader will find the text somewhat ponderous, as might be expected from an author trained in the German tradition. However, careful perusal will repay the effort involved. This volume is a shining beacon in the flood of far too many murky publications in the German language which has recently deluged the medical profession. This book is highly recommended for the roentgenologist and cardiologist as well as the internist.

Slavonic Encyclopaedia. Edited by Joseph S. Roucek, Ph.D. Cloth. Price, $18.50. Pp. 1445. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1949.

The present publication is the first attempt to provide a Slavic encyclopedia in English. Edited by Joseph S. Roucek of the University of Bridgeport, assisted by a board of collaborators, the encyclopedia attempts a coverage of the most important developments in the history of the Slavonic peoples, including those living outside the territorial limits of the Slavonic states as well as those who have joined the stream of America's civilization.

The scheme of the encyclopedia is much like that of the *Encyclopedia Britannica,* except that it is limited to one volume of 1,445 pages. The treatment is not limited to Russians, Czechoslovaks, Poles, Yugoslavs and Bulgarians but includes such subdivisions as Slovenes, Slovaks, Croats, Lusatian Serbs, Galicians and Ukrainians. The idea of Pan-Slavism is not stressed. The approach is strictly descriptive, empiric and scientific. The volume will supply a gap in the knowledge pertaining to the history and culture of Slavonic peoples. The articles are informative and authoritative.

Mollison's Forensic Medicine Lectures. Revised by Keith Macrae Bowden, M.S. Fifth edition. Cloth. Price, 37s.6d. Pp. 282, with 65 illustrations. W. Ramsay (Surgical) Pty., Ltd., 340 Swanston St., Melbourne, C.1, 1949.

This is the fifth edition, published in 1949, of a series of lectures in forensic medicine. The author states that the present edition is revised, enlarged and illustrated. He was a former student of Dr. C. H. Mollison, who apparently introduced these lectures to the students. The reviewer did not refer to any previous editions of Mollison's lectures on forensic medicine because he felt that the present edition of Dr. K. M. Bowden should be judged on its own merits. There are 20 chapters in this volume, and they cover such subjects as sudden and unexplained deaths due to natural causes, traumatic injuries, toxicology, how to perform the autopsy and evidence at court.

One is immediately impressed at the outset of the many occurrences of "maybe" and "perhaps" in numerous paragraphs throughout the book. It is known that in biologic subjects there may not be precise and exact interpretation for various phenomena, but the comments on various problems in the pathology of forensic medicine are confusing and the reader is left in a quandary. The discussions are rather superficial, and the examples cited to illustrate various cases are poor. There is repetition and verboseness. Many of the illustrations are poorly reproduced. The editor of these lectures frequently refers to the microscopic findings that will be helpful in the diagnosis of the disease discussed, but there is no microscopic discussion given that would be helpful to the reader.

A few examples will illustrate many of the inaccuracies in this volume. On page 32, where the author discusses the identification of the dead body, he makes the statement, "When only bones are available for examination, the sex of the deceased cannot be determined with accuracy unless the pelvis is available. It is not wise to give an opinion on any individual bone." The reviewer suggests that for future editions the editor of these series of lectures should familiarize himself with the contributions of anthropologists on the subject of identification of bones and he will find that physical anthropologists can determine age, sex, race, height and weight of the deceased by the examination of the bones.

Contradictory statements in the book appear, such as, on page 49, "Extravasation of blood rarely occurs in the substance of the brain itself. . . ." and on the same page, "Extravasation of blood, however, on the surface of the brain is invariably due to violence. Sometimes it is the result of diseased blood vessels, etc." In the discussion of gunshot wounds on page 87, the following sentence appears: "It is hard to imagine a man allowing another to fire a weapon into his mouth, unless perhaps the victim was asleep with his mouth open—that would be a very unlikely occurrence."

Although it is stated that these lectures were intended for students, it is the opinion of the reviewer that they do not fulfil this requirement. There are many books published in England and in the United States on the subject of forensic medicine and the pathology of trauma, including toxicology, which are better suited for the student, the practitioner and the pathologist.

Microbiology and Man: Being an Account of the Diverse Properties and Characteristics of Microorganisms, a Description of the Various Tools and Techniques for Their Handling, and an Inquiry into Their Subtle Relationships to Everyday Life. By Jorgen Birkeland, Ph.D., Professor of Bacteriology, Ohio State University, Columbus, Ohio. Second edition. Cloth. Price, $5. Pp. 525, with 54 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

This book "is designed as an elementary text for the student who plans to take but one or two courses in microbiology" and "is intended to serve as a basis for an understanding of the part played by micro-organisms in everyday life." In attempting to reach his objective the author, a professor of bacteriology, has prepared this second edition of an inexpensive book, the first edition of which was reprinted twice since 1942. This second edition is revised; much has been rewritten, and six new chapters and new illustrations have been added.

Approximately one third of the book deals in a conventional manner with bacterial morphology, physiology and antibiotics, defense against infection and epidemiology. The second third deals with infectious diseases much as would be expected in a textbook of medicine or preventive medicine, with little emphasis on bacteriology or virology. A few omissions, such as discussions of viral hepatitis, viral pneumonia, viral dysentery and rickettsialpox, occur. No diseases caused by fungi are discussed. A few errors are detected, such as in the statement that streptomycin is of value for cholera, and the "Q" of Q fever stands for Queensland (it stands for query). The cause of Q fever is now listed as Coxiella burneti, not Rickettsia burneti.

The final third covers the microbiology of air, food, milk, water, sewage and soils and food-borne diseases, with a short chapter on bacterial warfare, a glossary and an index.

The book is well written, has good illustrations and, except for a few minor points, is up to date and accurate. It goes much further than its stated purpose, to serve as an elementary text for students who plan to take "one or two courses in microbiology." It is especially appropriate for medical students and for all others interested in infectious disease.

Die Asthetik der Nase vom plastisch-chirurgischen Standpunkt aus Betrachtet. Von Dr. Alfred Berndorfer. Boards. Price, $2.10. Pp. 87, with 12 illustrations. Wilhelm Maudrich, Spitalgasse 1 B, Vienna IX, 1949.

This short monograph by Dr. Alfred von Berndorfer is an unusual and highly specialized analytic outline of the restricted subject of esthetic rhinoplasties. It is a critical perspective and inventory of the extraoperative considerations of plastic surgery of the nose; specifically, the rhinokyphectomies and other esthetic revisions of nasal form. It is a treatise for the expert. The student and occasional operator will find it too complicated in its extrasurgical considerations.

Although the author considers the monograph "einen kurzen Einblick" into the field of formative surgery of the nose, he nonetheless covers esthetic diagnosis, embryologic development of the nose, anatomy and anthropology, esthetic and anatomic considerations, the meaning of physiognomy and form pathology, as well as the technic of operation and complications.

It is altogether an interesting though somewhat philosophic excursion into the manifold implications of formative nasal surgery which every expert in the field should find interesting to read. The psychiatrist may regard it as a link between formative surgery and psychiatry.

An Atlas of Bone-Marrow Pathology. By M. C. G. Israëls, M.Sc., M.D., M.R.C.P., Deputy Director, Department of Hæmatology, the University and Royal Infirmary, Manchester, England. Cloth. Price, $6.50. Pp. 79, with 15 illustrations by D. Davidson, Medical Artist to the University of Manchester. Grune & Straton, Inc., 381 4th Ave., New York 16, 1948.

This volume contains a brief summary of the more important pathologic patterns found in bone marrow in various diseases. The book is divided essentially into two parts, the first dealing with descriptive material on technics of aspiration, classification of cells and pathologic pictures and the second with drawings in color of actual marrow material in the various disorders.

Concerning the first section, Dr. Israëls has, fortunately, presented the material in a concise and instructive manner. His classification of cell types stresses easily identifiable changes rather than the minutiae which have tended to make this field so difficult for the student. The material on leukemias, likewise, emphasizes a functional rather than a morphologic approach. The description of marrow findings on the basis of qualitative, rather than "exact" quantitative, features has its merits. Finally, his summaries of pathologic changes of marrow will be of great help in the interpretation of the various marrow patterns.

Although the drawings are carefully executed and well printed, they fail, in large measure, to fill the gap in illustrative hematology. Nuclear structure is in general not too well depicted, and the coloring is sometimes inadequate. Nevertheless, the drawings will prove helpful in identifying cells in many cases.

Facts About the Change of Life. By E. C. Hamblen, M.D., F.A.C.S., Professor of Endocrinology and Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine, Durham, N. C. Cloth. Price, $2.50. Pp. 86. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1949.

This small book was written for the lay public to remove many of the groundless fears which women have had about the "change of life." In simple language and with the aid of illustrations the author describes the reproductive organs and their function. He then discusses the cessation of this function and the changes ushered in at the termination of the reproductive period. The symptoms of the menopause are described and the treatment that is available for their amelioration discussed. He emphasizes regular medical supervision in this important period of the woman's life as the best insurance against undesirable sequelae.

The book can be recommended to any patient who consults her doctor about her menopausal symptoms. She will be a more intelligent and, therefore, a more cooperative person because she has read this book.

Germ-Free Life Studies. By J. A. Reyniers and others. Number 2, Lobund Reports, A Publication from the Laboratories of Bacteriology, University of Notre Dame, edited by James A. Reyniers. Cloth. Price, $2.50. Pp. 162, with illustrations. The University of Notre Dame, Notre Dame, Ind., 1949.

LOBUND is the abbreviation for Laboratories of Bacteriology, University of Notre Dame. This monograph consists of three articles by Reyniers and his associates. Article 1 occupies 116 pages and is entitled "Rearing Germ-Free Chickens." In this article, a brief historical survey of the early attempts to rear germ-free chickens is made and a complete description is given of the methods presently in use at LOBUND for rearing and studying these germ-free animals. Article 2 is entitled "Some Observations on Germ-Free Bantam Chickens" and occupies 31 pages. Bantam chickens were reared through an entire life cycle and into the second generation. Article 3 is 13 pages in length and bears the title "The Need for a Unified Terminology in Germ-Free Life Studies." A discussion of the need for terminology in this work is given, and the term *gnotobiote* (Greek: known life) is proposed. This monograph should prove helpful to research workers in nutrition as well as to those engaged in research where the functional role of specific organisms is to be evaluated in the animal body.

Optometry: Professional, Economic, and Legal Aspects. By H. W. Hofstetter, Associate Professor of Optometry, The Ohio State University, Columbus, Ohio. Cloth. Price, $6.50. Pp. 412, with 35 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

This book is intended, as the author explains in the preface, as a reference and textbook for use in undergraduate courses in optometry designed to familiarize the student with various nonclinical aspects of the practice of optometry, such as jurisprudence, economics, history, professional and interprofessional relationships, educational and organizational problems, practice management, ethics and general civic and sociologic problems of vision and eye care. In a more general way, the book is designed to be of value as a library reference on optometry. The early chapters deal with such subjects as the legal status of optometry, reciprocal licensure and qualifications for licensure in general, the optometrist as a witness in court, liability for malpractice and the use of the title "doctor." The author's discussion of the economic aspects of optometry include chapters on the earnings of optometrists and the factors entering into the amount of fees to be charged, practice-building technics and office accounting. An interesting account is given of the development and present status of optometric education, including a description of procedures for the rating and accrediting of schools and colleges. Still other chapters contain statistics on the number, distribution and supply of optometrists and on the prevalence of visual anomalies in the general population. Brief references are made to the role of the manufacturers and distributors of ophthalmic supplies and to the functions of the optician, and throughout the book the reader will find comments on what the author describes as the conflict between optometrists and ophthalmologists or oculist. The book is well written and contains much valuable reference material.

Obesity . . . By Edward H. Rynearson, M.D., F.A.C.P., Associate Professor of Medicine, Mayo Foundation, Rochester, Minn., and Clifford F. Gastineau, M.D. Publication Number 36, American Lecture Series: A Monograph in American Lectures in Endocrinology. Edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago, Ill. Cloth. Price, $3.50. Pp. 134, with 10 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1949.

The authors' stated purpose is to present a monograph for the use of the practicing physician rather than for the investigator in this field. This purpose is remarkably well achieved in that the book is essentially practical with theorizing kept at a minimum. It is thoroughly authentic and informative concerning all questions of etiology, diagnosis and therapy that may interest the general practitioner, while it is sufficiently concise and clear for readability and immediate application.

Almost half the text is devoted to the physiology and pathogenesis of obesity, with chapters on the role of psychologic factors, the hypothalamus, cerebral, endocrine and genetic elements, water retention and disorders in the use of energy. There is a thoughtful chapter on contraindications to weight reduction. The rest of the text deals with methods and technics of therapy, including charts, composition of foods and sample menus as well as careful and critical evaluations of psychotherapy, glandular preparations, drugs, exercise and heat treatment. There is an excellent bibliography. This book should be required reading for the general practitioner.

Hematology for Students and Practitioners. By Willis M. Fowler, M.D., Professor of Internal Medicine, University of Iowa, Iowa City. With a chapter by Elmer L. DeGowin, M.D., Associate Professor of Internal Medicine, University of Iowa. Second edition. Cloth. Price, $8.50. Pp. 535, with 112 illustrations. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 E. 33d St., New York 16, 1949.

The second edition of this excellently printed book has added data on folic acid, urethane and radiophosphorus, and changes have been made in the chapters on multiple myeloma, infectious mononucleosis and hemoglobinurias. The form of presentation of the material—digested conclusions rather than what different authors think or have reported—is maintained in this edition as in the first. This makes it an ideal text for students, reminding one of the style of Osler's Text Book of Medicine in some respects. This has the advantage that a clearcut account of each disease is given, but has the disadvantage that the digestion process represents the author's own conclusions, requiring repeated revisions as future publications discredit older work. The chapter on transfusion of whole blood and blood derivatives is unusually good for the purpose for which it is presented and includes much material that shows an extensive personal experience with the subject.

British Surgical Practice. Under the General Editorship of Sir Ernest Rock Carling, F.R.C.S., F.R.C.P., Consulting Surgeon, Westminster Hospital, London, and J. Paterson Ross, M.S., F.R.C.S., Surgeon and Director of Surgical Clinical Unit, St. Bartholomew's Hospital, London. In eight volumes (with index volume). Volume 5: Hodgkin's Disease to Lymphogranuloma. Cloth. Price, $15. Pp. 494, with 225 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3; Butterworth & Co., Ltd., 4-6 Bell Yard, Temple Bar, London, W.C.2, 1948.

Volume 5 of the series now being reviewed has the excellent tone which characterizes the previous volumes of this set. The subject matter extends from Hodgkin's disease to lymphogranuloma. It includes such diverse subjects as jaundice and joints. An inherent defect now becomes evident, although it is not serious; under "Liver" only cirrhosis is discussed, presumably because other diseases of the liver are presented elsewhere. A thorough indexing may remedy the situation. An excellent presentation of legal situations arising from the practice of surgery is included. While of little value to American surgeons, the lessons are enlightening. The illustrations are adequate and of high quality. The promise of the earlier volumes is upheld, but complete assessment can be made only when all of the volumes are available. The editorial care given to this series is admirable.

Operative Surgery. By Frederick C. Hill, B.A., M.S., M.D., Associate Professor of Surgery, The Creighton University School of Medicine, Omaha, Nebraska. Foreword by Charles W. Mayo, B.A., M.S., M.D. Cloth. Price, $12.75. Pp. 698, with 255 illustrations. Oxford University Press, 114 5th Ave., New York 11, 1949.

The preface states that this book is designed for the less experienced surgeon, the intern or the resident. The development of textbook material of presumably elementary nature for a highly complicated and technical subject is difficult. Whether it is desirable to reduce the content of such a book to a minimum is doubtful. The resident has already completed many years of basic study, and the garnering of particular information in his chosen specialty requires a broad outlook on medicine in general. A book of this sort can serve only as a guide for quick reference and cannot replace the intensive reading which is necessary. This is a clear, concise, oversimplified presentation of a long and arduous course of study. The illustrations are good and helpful. The intern and first year resident in surgery may find some guidance in this book through the surgical wilderness in which he too often finds himself.

Atlas of Oral and Facial Lesions and Color Film Library [Including 100 Color Slides]. By Ralph Howard Brodsky, D.M.D., Consulting Oral Surgeon, Department of Hospitals, New York City. Cloth. Price, $80. Pp. 127, with 100 text illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1948.

This monograph by Dr. Brodsky is an interesting and unusual departure from the standard manner of compiling an atlas. It is a collection of 100 clinical pathologic afflictions of the oral cavity. A short treatise of etiology, signs, symptoms and diagnosis is accorded each condition. This is followed by a concise paragraph on therapy. Each case is attended by an outline drawing of the involved part and allocation of the lesion. These outline drawings parallel 100 kodachrome® slides (35 mm.) supplied with the book, each one representative of one of the clinical conditions discussed. The latter is the unusual part of this monograph. It makes available to the interested clinician, as well as the teacher, a fairly complete collection of slides, as well as didactic reference to the more common afflictions of the oral cavity. The dentist and oral surgeon will find it particularly interesting and useful.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

ESTIMATION OF TIME OF DEATH

To the Editor:—A person dressed for zero weather, in boots, overshoes, heavy underwear, levi overalls and heavy waist jacket, was shot three times through the chest, which killed him instantly. The ground on which the body lay was packed hard with snow. The temperature at the time of the killing was around zero. To determine the approximate time of death, I would like to know how long would it take that body to cool. Josef F. Replogle, M.D., Lander, Wyo.

ANSWER.—In estimating the passage of time following death one must consider two regions of cooling: the body surface and the deep lying viscera. In the case cited, there was a steep thermal gradient between the body and the environment, i. e., 98.6 F. to 0 F. There would, therefore, be a very rapid fall in skin temperature once the circulation ceased bringing warm blood to the surface. Skin protected by heavy clothing over the torso would cool more slowly than that of the extremities, partly because the viscera serve as a reservoir of heat. Within an hour at 0 F. all the skin should cool to such an extent that the exploring hand would find it cold to touch. The rapidity of cooling would depend to some extent on the firmness of contact and the area of contact of the body with the ground, size and weight of the body and greatly on the velocity of the wind. Visceral temperature, as recorded by a thermometer inserted deeply into the rectum or into a solid organ, such as the liver, falls more slowly. Experimental data indicate that at environmental temperatures between 50 F. and 70 F. the following formula gives the approximate length of the postmortem interval:

$$\frac{98.6\text{ F.} - \text{rectal temperature}}{1.5} = \text{hours after death}$$

Like all the other criteria for judging the time of death, the temperature of the body must be used with extreme caution.

THE MONGOLOID CHILD

To the Editor:—Kindly recommend a book of instructions to aid a mother in guiding the development of her mongolian idiot child. She has elected to keep the child in the home. G. Cooley Nabors, M.D., Yorktown, Va.

ANSWER.—Most of the mongoloid children are not idiots but are at least imbeciles (I. Q. 25 to 50). Some are morons with an intelligence quotient between 50 and 65. This, however, is rare. There are no books specified for parents to guide them in bringing up mongoloid children.

The mongoloid child thrives much better at home at least in the first 6 to 10 years of his life. These children should not be placed in a state institution too early. Parents and physicians have to realize that the mongoloid child develops mentally and physically at a slower rate, needing about three times as much time than the normal. Mongoloid children usually learn to walk between 2 and 3 years of age and to be toilet trained and start to talk between 3 and 5.

In a good home they usually have a pleasant disposition and, if they are restless and destructive, it is usually rejection on the part of the parents and siblings which makes them that way and not an inherent bad disposition. Only stubborness is rather common in all mongoloid subjects. They learn by imitation and pick up a great deal from their normal environment if they are treated with affection and care. The physician can speed up the development to a certain degree through thyroid and pituitary treatment. It is a misconception that thyroid makes a mongoloid person restless. If he is restless, he is restless with and without thyroid, and if he becomes more restless with thyroid it is due to wrong dosage, either too low or too high. Thyroid is, however, of little value if the mongoloid child is beyond 4 years of age and is not overweight, inactive and dull. In babies, thyroid improves the condition greatly. Thyroid treatment alone, however, does not do the job, and the endocrine treatment has to be a skilful combination of pituitary, thyroid and possibly gonadal extracts. This chemotherapy has to be combined with proper educational and psychological "mothering" in order to effect optimal results.

CONGENITAL HEART DEFECTS

To the Editor:—A 20 year old white woman has had two pregnancies. The older child, 2 years old, has a patent ductus arteriosus. The second child, born one month ago, died at the age of 3 weeks and at autopsy was found to have an interventricular defect. The past history is normal as concerns infection during pregnancy with either German measles or a virus. During the last pregnancy the mother was admitted to the hospital on two occasions, once during the first trimester and again during the last trimester of pregnancy. The admissions were for "gallbladder attacks." There was no jaundice during the attacks, and the results of the Graham-Cole tests were said to be negative as concerns stones, but the tests revealed dysfunction. What is the possibility of future pregnancy resulting in another congenital heart condition? M.D., Massachusetts.

ANSWER.—There is not as yet enough adequate information to permit one definitely to answer the question asked. There is sometimes a familial incidence of congenital heart disease, but, if in the family history there has been no evidence of inheritance of congenital defects over the last two or three generations, it is probable that these children referred to have had congenital heart defects only coincidentally, perhaps as the result of some illness during early pregnancy (not clearly accounted for aside from the gallbladder attacks). There has been no indication in the past that gallbladder disease in the mother has been responsible for congenital heart disease in the infant. However, some unusual infection or disease responsible for the so-called gallbladder attacks might conceivably have been a factor early in the second pregnancy in this case. Although it is possible that a future pregnancy would result in another congenital heart defect, the probabilities are that it would not.

CHRONIC BRUCELLOSIS

To the Editor:—I have a patient who has chronic undulant fever. He has taken thirty-two doses of aureomycin. The laboratory tests of the blood still show positive results for the undulant fever. I would appreciate your advice in regard to the best procedure of treating him. R. M. Newsom, M.D., Ruby, S. C.

ANSWER.—It is not yet known what effect treatment with aureomycin may have on chronic brucellosis other than a favorable immediate effect in a patient or two. It will require several years of study before either the true value of the remedy or its optimal dosage and advisable duration of therapy can be known. Until that time all treatment of long-established infections with Brucella should be undertaken in the spirit of experimental therapy and the results, together with all attending relevant facts and circumstances, recorded and made generally available.

The total amount of aureomycin and the elapsed time between onset of therapy and the subsequent laboratory tests are not stated. Consequently no opinion can be formulated about adequacy of dosage or probable time of loss of serum agglutinins. Although the agglutinin titer often falls slowly over a period of several months after recovery occurs, an occasional patient may show a persistently high titer for a year after apparently complete clinical recovery. There is as yet no single form of treatment that is the best for all patients with chronic brucellosis.

CHRONIC AMEBIASIS

To the Editor:—My brother-in-law has been treated for two years for chronic amebiasis. The last course was in December 1948, when he was in the hospital for three weeks and received diiodo-hydroxyquinoline, chiniofon retention enemas, streptomycin injections, sulfasuxidine and oxygen rectally. The patient is despondent. Is there a different course of treatment that could be suggested? G. F. de Villiers, M.D., South Africa.

ANSWER.—The treatment of chronic amebic dysentery frequently involves a dual problem: the elimination of the Endameba histolytica and the correction of secondary infection. Three groups of drugs are recommended for their antiamebic action: emetine hydrochloride, by intramuscular injection preferably, and emetine bismuth iodide by mouth, the oxyquinoline sulfonic acid derivatives of which there are a number of preparations. The third group are the arsenicals, of which carbarsone is probably the most useful and the least toxic.

The oxyquinoline series are not absorbed sufficiently from the intestinal tract to be effective amebacidal drugs against organisms actually within the host's tissues. Their action is principally limited to amebas on the surface of the mucous membrane or superficially placed in open ulcers. The carbarsone, however, is reasonably active against the organisms in all sites, since it is well absorbed. No single drug, however, can be depended on to eliminate the infection. Generally the optimal results are obtained with the concurrent administration of emetine hydrochloride and one of the sulfonic acid derivatives.

The secondary infection which frequently accompanies long-standing intestinal amebiasis is best combated by administration of the appropriate antibiotics or various of the sulfonamide drugs. Here again it is probably best to use a drug which gives a reasonably high blood level. For this reason, sulfadiazine may give more effective results than the less well absorbed preparations. The statement that amebas have been found within a month after treatment suggests that these amebas are probably nonpathogenic and that the patient has an extensive secondary bacterial infection of the wall of the colon, producing a clinical picture resembling that of idiopathic ulcerative colitis.

ULCER DIET WITHOUT MILK

To the Editor:—Describe an ulcer diet for patients who are unable to take milk.

Robert S. Srigley, M.D., Hollis, Okla.

ANSWER.—The ulcer patient who cannot take milk is at a disadvantage in the choice of suitable foods. Fortunately, the situation is exceedingly rare. For this unusual patient, a sample diet is outlined herein. This, of course, is to be supplemented by frequent doses of antacids throughout the day and evening and also at night if the patient is awakened by distress.

Breakfast

- 1 serving
  - Fruits
    - Orange or grapefruit juice
    - Peach purée
    - Prune purée
    - Pear purée
    - Apricot purée
    - Apple sauce
    - Baked apple (no skin)
- Eggs (1 or 2)
  - Soft cooked
  - Soft boiled
  - Soft poached
- Bacon
- 1 or 2 slices
  - Toast with margarine
- 1 cup
  - Coffee
  - Tea

Dinner

- Soup (strained or clear broth soup)
  - Barley
  - Rice
  - Pea
  - Potato
  - Celery
  - Spinach
  - Lettuce
  - Asparagus
  - String beans
  - Carrot
  - Tomato
- 1 serving
  - Baked potatoes
  - Mashed potatoe
  - Rice
  - Spaghetti
  - Macaroni
  - Noodles
- Vegetables, strained or puréed or cooked until soft
  - Carrots
  - Beets
  - Asparagus
  - Peas
  - Squash
  - Spinach
  - Green beans
- Meat: 1 small serving of:
  - Roast chicken
  - Stewed chicken
  - Broiled whitefish
  - Minced, diced or scraped beef
  - Small portions of roast
    - Lamb
    - Beef
    - Mutton
  - Broiled steak and lamb chops (thoroughly masticated)
- Desserts
  - Jello

Supper

- Soup (see dinner list)
- Soft egg
- Small potato, mashed
- Small meat serving
- Crackers or toast
- Jello

If the patient can tolerate milk products, butter and cream cheese may be added. If milk is tolerated in cooking, plain cakes and cookies may be added. It is important to remember that if a patient managed to exist without milk before the appearance of the ulcer, he can also do so with an ulcer. The restriction in choice of foods will be scarcely greater than before. The main difference will be in the manner of preparation of those foods and the addition of antacids.

BORIC ACID SOLUTION AS A WET DRESSING

To the Editor:—The question of the therapeutic value of boric acid solution employed as a wet dressing or soak in acute inflammation of the skin has been raised. This form of treatment has been used extensively by dermatologists. I would like an expression of opinion as to its value; whether any other medicament is as good or better, and what is the optimal strength of boric acid solution used as a wet dressing.

Charles Wolf, M.D., New York.

ANSWER.—The p_H of acutely inflamed skin is on the alkaline side. To counteract this alkaline reaction, use is made of dressings or soaks with drugs of a mildly acid reaction, such as boric acid solution, which has long been recognized as a valuable drug for this purpose. It is used in saturated solution. Many dermatologists, however, prefer a 0.5 per cent solution of aluminum subacetate, because, in addition to its acid reaction, it has a slight astringent effect.

THE MORGAN BACILLUS

To the Editor:— A female patient has had six to eight stools a day with occasional mucous strands for about six weeks. I have examined her stools for Endamoeba histolytica and other parasites to no avail. The laboratory reports the stool culture as positive for Bacillus morgani. The patient is 47 years old. What is the significance of this observation, and what is the best treatment?

Howard B. Hasen, M.D., Ackerman, Miss.

ANSWER.—The Morgan bacillus number 1 is classified in the genus Proteus in Bergey's "Manual of Determinative Bacteriology" (ed. 4, Baltimore, Williams & Wilkins, 1948). Pathogenicity of the organism in the intestine of man is considered doubtful. It has been found in the feces of patients with "asylum dysentery" and in the stool and blood of patients with an illness resembling paratyphoid fever. Examination of feces of a large number of persons revealed the organism in 1.2 per cent. It has been found in the intestine of birds, reptiles and mammals.

If no other cause of this patient's diarrhea is found and the Morgan bacillus is isolated from the stool repeatedly, it might be worth while to attempt to eradicate it. Streptomycin sensitivity of the organism should be determined, as 57 strains studied by Pulaski and Spring were found to vary in sensitivity to 1 to 128 micrograms per cubic centimeter of medium. If the organism is moderately sensitive to streptomycin, the drug could be given orally in a dose of 2 to 4 Gm. daily for five to ten days. It is probable, however, that repeated fecal cultures will not yield the organism and that it will be found to bear no relationship to the diarrhea.

DIMINISHED GLUCOSE TOLERANCE

To the Editor:—What is the diagnostic value and significance of this reported glucose tolerance determination? Mrs. S. M. was seen Dec. 31, 1948, complaining of amenorrhea for three months. She believed that she was pregnant and came for a prenatal check-up. She has one child 4 years old and has had one other pregnancy, with spontaneous abortion at the third month, Aug. 1, 1948. Her last normal period was Sept. 2, 1948. No symptoms of pregnancy have shown up yet except occasional "weak, kind of fainty spells." She could not further describe these but thinks that she has had three light spells during the last two weeks. She also had what was diagnosed as an attack of influenza about a week ago, during which she complained of weakness, general aching, profuse perspiring at times and an elevation of temperature of about 2 degrees. This attack lasted four days. On Dec. 31, 1948, the blood pressure was 110 systolic and 70 diastolic; her weight was 121 pounds (54.4 Kg.) and height 5 feet, 4 inches (163 cm.). Physical examination did not reveal any significant abnormality. The urine was clear and amber colored, with a specific gravity of 1.020; it had an acid reaction; there was a trace of albumin, and the sugar content was 4 plus (Benedict's qualitative). Microscopic examination showed occasional white blood cells (high power field) and few bacteria. Blood sugar was 82 mg. per hundred cubic centimeters. A glucose tolerance test, Jan. 3, 1949, showed fasting blood sugar, 94 mg. per hundred cubic centimeters. With 100 Gm. of dextrose given by mouth, the 30 minute specimen blood sugar was 261 mg., 1 hour specimen 189 mg., 2 hour specimen 142 mg. and 3 hour specimen 100 mg. per hundred cubic centimeters. When the technician attempted to take the 4 hour specimen, the patient suddenly became extremely weak, apprehensive and faint, perspired profusely and gave the appearance of insulin shock. Furthermore, when given a glass of sweetened orange juice, she immediately recovered from shock. However, the 4 hour blood specimen was not taken. What are the recommendations for other diagnostic tests?

Mae E. Porter, M.D., Lineville, Alabama.

ANSWER.—The blood sugar curve in itself indicates a diminished tolerance for glucose. This sometimes occurs in pregnancy, but rarely as early as three months. In view of the return to a normal value at 3 hours, and particularly in view of the probable hypoglycemia which occurred at 4 hours, the diagnosis of diabetes mellitus is unlikely. Other conditions in which this type of glucose tolerance curve may be observed are: (*a*) previous restriction of dietary carbohydrate; (*b*) endocrine disorders, especially hyperthyroidism and adrenal insufficiency, (*c*) emotional disturbances and (*d*) "idiopathic" alimentary hyperglycemia.

The presence at the office visit of glycosuria (4 plus) with a blood sugar content of 82 mg. per cubic centimeters might suggest a low renal threshold for glucose, but could equally well be explained by a sharp rise of the blood sugar after the preceding meal with the excretion of sugar-laden urine which was retained in the bladder until passed a few hours later, by which time the blood sugar had returned to normal. The shape of the glucose tolerance curve makes the latter explanation the more probable.

The glucose tolerance test should be repeated after at least three days of a high carbohydrate diet, with careful attention to the collection of urine specimens at the times when blood samples for glucose are drawn. If the second curve resembles the first, the basal metabolic rate should be determined. If this, together with clinical findings, appears to exclude hyperthyroidism, the water excretion test of Robinson, Power and Kepler may be employed as an aid in the evaluation of the state of the adrenal glands (Robinson, F. J.; Power, M. H., and Kepler, E. J.: Two New Procedures to Assist in the Recognition and Exclusion of Addison's Disease: A Preliminary Report, *Proc. Staff. Meet. Mayo Clin.* 16: 577 [Sept. 10] 1941).

If no cause for the abnormal carbohydrate metabolism can be found, it may be necessary to regard it for the time being as "idiopathic" alimentary hyperglycemia. In this event, however, the blood sugar content should be determined from time to time over a period of months or years, for in such patients true diabetes mellitus occasionally develops. The amenorrhea, if not a result of pregnancy, could be due to any of the systemic disorders mentioned. A diet low in carbohydrate (150 Gm.) and high in protein (100 to 120 Gm) would minimize any tendency toward postprandial hypoglycemia which the patient may have.

COMPLICATION OF MUMPS

To the Editor:—A 20 year old Marine private was admitted to the hospital with mumps. Subsequent developments revealed bilateral parotid gland and left-sided submaxillary gland involvement, with dyspnea and vertigo during the first twenty-four hours. He complained of a constricting sensation in the region of the larynx and was pale and anxious. The shortness of breath was relieved by his sitting up in bed. Laryngoscopic examination failed to show any obstruction. The turbinates were moderately congested and phenylephrine hydrochloride (neo-synephrine®) gave moderate relief. Examination of the heart and lungs was nonrevealing. The circulation time arm to lungs and arm to tongue was normal, as was a roentgenogram of the chest and a routine electrocardiogram. However, on carotid sinus pressure unilaterally, especially on the left, the heart rate slowed to 60 from 84 on repeated trials. Bilateral carotid pressure resulted in a rate of 44 per minute; the blood pressure fell to 60 systolic and 0 diastolic, and the patient became weak and pale, stating that the sensation resembled closely the difficulty he had had spontaneously. The blood pressure fell to 80 systolic and 35 diastolic on repeated trials and unilateral pressure, especially on the left, with very distant heart sounds and slowed rate. In the electrocardiogram, lead 2 showed an absence of P waves and an inverted T wave, with a rate slowed to 44 per minute in the most outstanding instance during three cycles, reverting then to normal. Administration of atropine and belladonna did not help greatly even in large doses, but epinephrine helped both the fainting and the low blood pressure. The patient was therefore given ephedrine and phenobarbital, with no further trouble until this medication was stopped. Eight days later, after the patient had been ambulatory, the symptoms returned but again responded to the aforementioned medication. About five weeks after the original episode, bilateral carotid pressure resulted in only moderate slowing and the blood pressure fell only from 116 systolic and 76 diastolic to 95 systolic and 70 diastolic on one occasion with very little fall in other trials. The rate was little slowed and the patient felt little subjective sensation. He had no other complications. Do you believe a pressure effect on the carotid sinuses from the enlarged glands, especially the submaxillary, may have been the exciting factor?
M.D., California.

Answer.—It is possible that the symptoms which you cite were due, in part at least, to bilateral carotid pressure. However, the toxin produced in an attack of mumps has a depressant action on the heart and circulatory system. Consequently, the circumstances observed may perhaps be attributed to a combination of factors. The possibility of encephalitis cannot be ignored.

NEWCASTLE DISEASE

To the Editor:—Within the last few days I have been advised that Newcastle disease in chickens is transmissible to human beings. According to poultry men a vaccine has been developed which is efficacious in chickens. I cannot find any material on Newcastle disease. Is there any vaccine or treatment known for human beings or any special test by which one can determine human infection?
J. F. Pessel, M.D., Trenton, N. J.

Answer.—There have been 3 proved cases in human beings of infection with Newcastle disease virus (Anderson, S. G.: *M. J. Australia* 1: 371, 1946. Burnet, F. M.: ibid. 2: 313, 1943) and 17 cases in which the disease was diagnosed clinically (Yatom, J., in Foreign Letters [Palestine], J. A. M. A. 132: 169 [Sept. 21] 1946). The proved cases occurred in laboratory workers handling the virus, in whom the incubation period varied from a few hours to two days. The disease manifested itself as unilateral, superficial conjunctivitis without involvement of the cornea or as a syndrome consisting of conjunctivitis, preauricular lymphadenitis, headache, malaise and chills, without significant rise in temperature. All reported patients have recovered completely within a short time. The diagnosis of Newcastle disease in human beings is made (*a*) from a history of exposure to the virus or to fowl ill with the disease, (*b*) by isolation of the virus from the conjunctival exudate and its identification by proper laboratory tests and (*c*) by determination of the development of specific neutralizing antibodies in serum taken from persons suspected of having the disease. There is at present no vaccine available for use in human beings. In the light of what is now known, there seems to be no need for such a vaccine.

CHRONIC DUODENAL ULCER

To the Editor:—A white man aged 60 has had a duodenal ulcer for twenty years with about fifteen attacks of melena as the only complication. He has been fairly well since his divorce in 1947. He has not been in business since then, and this has grieved him. For the past month he has been bothered by abdominal cramps and slight distention. Food or amphoteric alkalis, atropine and barbiturates help occasionally. The passage of flatus or stool gives complete relief of all symptoms. He often gives himself an enema with some relief at times. When he has "bad days" he tends to be constipated. Bowel sounds are always present. Is there some way to promote the passage of gas?
M.D., California.

Answer.—As there is a possibility of organic disease, the patient should have further diagnostic studies. From the data supplied, several diagnoses should be considered, including obstruction resulting from scar formation at the site of the old duodenal ulcer or cancer of the pancreas, colon or stomach, although the incidence of gastric carcinoma seems to be low in patients with duodenal ulcer. Roentgenograms of the stomach, duodenum and colon should be made. A proctoscopic examination would be in order. Since many patients with carcinoma of the pancreas or pancreatitis have mild diabetes, a glucose tolerance test might be of value. If the results of these tests are negative, it may be helpful to continue the barbiturates and antispasmodics, along with several daily doses of alkali to prevent ulcer recurrence and a bland, low residue diet. The symptoms described are those seen not infrequently in patients without duodenal ulcer and are attributable to a combination of functional factors. The patient may be the victim of a depression and the irritable bowel syndrome.

EXPOSURE TO *p*-DICHLOROBENZENE

To the Editor:—A patient aged 70 years, while ill with a severe attack of herpes zoster on left side of his chest, was exposed accidentally to the fumes of p-dichlorobenzene, a moth exterminator. Immediately after the exposure acute emphysema and rhinorrhea developed, which have persisted for eighteen months. The nasal passages and pharynx are clear. Is it possible that there is any connection between exposure to these fumes and the emphysema and rhinorrhea?
M.D., Missouri.

Answer.—*p*-Dichlorobenzene, is a widely used crystalline insect repellent and is found in many households. Acute pulmonary emphysema is rare and possibly is caused only by obstruction of the respiratory tract. However, emphysema may arise as an early consequence of paroxysmal asthma or pulmonary edema. In such instances the term "acute emphysema" may not be warranted. Exposure to vapors of *p*-dichlorobenzene in high concentration may be discomforting, but no high degree of toxicity may be recognized. Conjunctivitis, dermatitis and nasal irritation may arise but are of brief duration. It is unlikely that rhinorrhea, if caused by this chemical, would have persisted for eighteen months. It is possible that this substance might serve as a sensitizer, causing symptoms of asthma, but the occurrence of immediate "acute emphysema" may be doubted. The wide extent of application of this chemical in a variety of circumstances has provided no reason for association with any known significant toxicity. Other forms of dichlorobenzene, such as the "ortho," may be more toxic. In the present instance, senile or postural emphysema should be considered. However, if circumstances warrant, the patient might be reexposed carefully to *p*-dichlorobenzene for observation.

LOBECTOMY

To the Editor:—A 40 year old white man has pulmonary tuberculosis which is moderately advanced and active. A bronchogram disclosed bronchiectasis of the upper lobe of the right lung. Sputum is reported positive for acid-fast bacilli. A lobectomy has been proposed. In the presence of active pulmonary tuberculosis, is a lobectomy the correct procedure?
M.D., New York.

Answer.—The choice of thoracoplasty, lobectomy or other surgical or nonsurgical treatment depends on a number of factors, namely, the extent and character of the tuberculous lesions, whether a cavity is present, whether there is bronchoscopic, roentgenologic or clinical evidence of tuberculous bronchitis, the daily amount of sputum and the behavior of the disease during the period of medical observation. Because a sound opinion about treatment must depend on a weighing of the relationships among these factors, it is impossible to recommend treatment without further information.

PROBABLE SMALL CEREBRAL INFARCT

To the Editor:—I have been observing a woman aged 74, the results of whose general examination are normal except for moderate arteriosclerosis. Sixteen months ago a tingling developed in the toes of her left foot, followed in a few weeks by an involuntary rhythmic contraction of the flexor muscles in all but the great toe. These contractions cease at night. There is no cyanosis. I have tried all types of treatment, including procaine hydrochloride injection of the nerve at the internal malleolus, which paralyzed the entire foot but did not stop the contractions. Could you suggest a diagnosis or treatment? Is the symptom the forerunner of paralysis? There is no toe drop. W. D. Bretz, M.D., Huntingburg, Ind.

Answer.—In the case presented, the area of tingling presumably has not increased in size and the involuntary rhythmic contractions are more or less continuous and dystonic rather than clonic. These features rule out cerebral neoplasm as a cause. The disturbance is uncommon, yet fairly characteristic. The cause probably is a small cerebral infarct of arteriosclerotic origin. Treatment generally is unsatisfactory. Although the disability may continue almost indefinitely, conservative therapy usually is justified. Most patients become adjusted to the annoyance. Blocking of the stellate ganglion by means of procaine hydrochloride might be tried. The occasional application of moist heat to the foot may give some relief, and the use of such remedies as histamine given intravenously, nicotinic acid or drugs of the atropine group might be tried for a few days. It is not likely that paralysis will occur.

THE PROETZ THERAPY FOR SINUSITIS

To the Editor:—I would appreciate information regarding the Proetz displacement therapy of sinusitis, particularly the technic, complications and contraindications. M.D., Wyoming.

Answer.—The Proetz displacement therapy for sinusitis consists of placing the patient's head in a hyperextended position and then filling the nasal passages with isotonic sodium chloride solution containing a dilute shrinking agent, such as 0.12 per cent phenylephrine hydrochloride or 0.25 per cent ephedrine, and applying suction while the patient closes his palate. The suction should be intermittent in order gradually to evacuate the air and secretion from the sinuses, thus allowing the solution to enter.

The treatment is of value in certain cases of chronic sinusitis. It is contraindicated in acute sinusitis, where it may result in spreading the infection from infected sinuses to uninfected sinuses. It is also useful for diagnosis with a radiopaque medium such as iodized oil. The procedure is thoroughly described in a booklet entitled "The Displacement Method of Sinus Diagnosis and Treatment," by Arthur W. Proetz.

HYPOCHROMIC ANEMIA

To the Editor:—We read that in the great majority of cases of iron deficiency anemia all that is needed is iron in the form of one salt or another; yet there is little doubt that barrels of "liver concentrate and iron" are given for hypochromic anemia every year. Would you kindly clarify the subject? Norman L. Baker, M.D., Springfield, Ill.

Answer.—Practically all hematologists feel that in uncomplicated iron deficiency conditions simple iron salts or reduced iron are adequate for hemoglobin regeneration. However, there are many patients who cannot take iron salts or who do not respond to iron salts taken by mouth. Some of these respond when liver or certain vitamins are added. Whether it is a specific liver effect (e. g., Whipple's "secondary anemia" fraction) or whether the presence of a reducing substance helps to keep the iron in a reduced (ferrous) state is still a question. When a person tolerates a maximum dose of iron by mouth, hemoglobin regeneration is optimum, and no additional medication can raise the height or rate.

GYNECOLOGIC SYMPTOMS FOLLOWING VAGOTOMY

To the Editor:—(1) Have any untoward gynecologic symptoms been observed following vagotomy for gastric or duodenal ulcer? (2) What is the effect on gastric acidity of vitamin B complex given (*a*) by mouth and (*b*) intramuscularly? M.D., Ohio.

Answer.—1. Untoward gynecologic symptoms have not been observed following vagotomy for gastric or duodenal ulcer. Although the ulcer may heal after vagotomy, the operation does not cure spastic colitis, if colitis is present, and the colitis may become worse. This seems to be due, in part, to the decrease in the acid concentration of the gastric content, which makes the patient more susceptible to diarrhea of bacterial origin. Lower abdominal pain or distress due to the colitis occasionally may simulate symptoms due to gynecologic disorders. 2. There are many observations, both clinical and experimental, which demonstrate that a deficiency of the vitamin B complex exerts a significant effect on gastric secretion. Achlorhydria or hypochlorhydria is frequently observed in beriberi and pellagra. In studies on dogs with Pavlov pouches, Cogwill and Gillman, and Webster and Armour demonstrated that a deficiency of vitamin B in the diet depresses the secretory response of the gastric glands to nervous and chemical stimuli. When severe deficiency exists, the secretion of hydrochloric acid in the gastric juice may be almost entirely abolished. Under such conditions, the administration of powdered yeast, as a source of vitamin B, restores the gastric secretory response to normal. . . .

SYPHILIS AND PREGNANCY

To the Editor:—I have a patient whose last menstrual period was Feb. 12, 1948, and who is due to deliver on Nov. 17, 1949. She was treated for syphilis with penicillin, and this treatment rendered results of tests of her blood negative. The reaction has remained negative without additional treatment for two years. The problem is whether or not to give this woman treatment during her pregnancy. I would like to know what type of treatment to give her. Elmo D. Zsiga, M.D., Bridgeport, Conn.

Answer.—There have been several studies in recent years, the results of which indicate that antisyphilitic treatment is not necessary for a pregnant woman who has been adequately and apparently successfully treated shortly before the onset of pregnancy. It might be well to examine the blood again in the fourth month and in the seventh month, and, if the results indicate a relapse, treatment should be instituted with penicillin by injection, 300,000 units daily for ten to fifteen days.

MÉNIÈRE'S SYNDROME

To the Editor:—In the July 16, 1949 issue of The Journal, in reply to the queries on treatment of Ménière's syndrome and paroxysmal labyrinthine vertigo, you state that phenobarbital is effective and practical.

May I add my personal experience with Ménière's syndrome and that of a number of my patients (3) with Ménière's syndrome. Treatment with *dramamine®* (*beta-dimethylaminoethyl benzohydryl ether 8-chlorotheophyllinate*) is effective in aborting and preventing attacks of Ménière's syndrome. One-quarter to 1 tablet two or three times daily will prevent or arrest attacks of vertigo. It will also reduce the intensity of the tinnitus and so may save some of the hearing in the affected ear.

William V. Wener, M.D., Norwich, Conn.

To the Editor:—In "Queries and Minor Notes," July 16, 1949, were two questions concerning patients with paroxysmal vertigo, one headed "Ménière's Syndrome" and the other "Paroxysmal Labyrinthine Vertigo." Judging by style and content, the answers to both were given by the same consultant. I take him to be a neurologist, whose advice is scarcely in accordance with current understanding. In effect, it is to give phenobarbital and hope for the best, which means that, if the patient is careful not to move his head and to take his phenobarbital for many years, he stands a reasonable chance of avoiding at least the most acute attacks. This treatment is apparently considered by your consultant the method of choice for paroxysmal vertigo, regardless of the fact that barbiturates are more apt to cause dizziness than to relieve it and regardless of the nature or location of the lesion. Identical advice is offered for two far from identical problems. If phenobarbital should fail (perish the thought!) then eighth nerve section is suggested for both conditions, again without regard to the possibility that the disturbance labeled paroxysmal labyrinthine vertigo, on the evidence presented, may well be a central disturbance on an arteriosclerotic basis and that, therefore, division of the eighth nerve distal to the site of the lesion would be useless. All this is cold comfort to a man seeking help, whether patient or physician. May I refer your correspondents, if they want some more constructive ideas, to a general review of the subject in Nelson's Loose Leaf *Medicine*, the latest revision of the section on neurology, and to some more recent observations by me in *Archives of Otolaryngology* (49:151 [Feb.] 1949). From what has been said, it must be obvious that I take sharp issue with the answers given. Idiopathic paroxysmal vertigo can be controlled, given a careful assessment of each case and the institution of appropriate methods, but it is not done with phenobarbital.

Miles Atkinson, M.D., 310 Lexington Avenue, New York 16.

To the Editor:—In *The Journal*, July 16, 1949, page 996, under Queries and Minor Notes, are two queries, one on Ménière's syndrome and one on paroxysmal labyrinthine vertigo. On the whole the replies may be satisfactory; however, I am certain that the person who gave these answers is in error regarding the inefficiency of the salt-free diet. I am also certain that with a salt-free diet ammonium chloride properly given is of distinct value. Enteric coated tablets are almost useless, and, if ammonium chloride is to be of value, it must be given in sufficient dosage and in a definite method. Then, and only then, it is frequently of great value.

If, as in the treatment outlined in these two replies, 1½ grains (98 mg.) of phenobarbital is given, the patient would become almost a bed patient. Particularly if given four times a day. The chance of recovery is slight without other management. Meniere's syndrome and paroxysmal labyrinthine vertigo are not acute illnesses and will not be handled satisfactorily with sedation only. G. Henry Mundt, M.D., Chicago, Ill.

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DERMATOLOGY AND SYPHILOLOGY IN A MODERN MEDICAL PROGRAM

Chairman's Address

ANTHONY C. CIPOLLARO, M.D.
New York

During and since World War II vast changes have occurred in medical education. There has been a reshuffling of methods and concepts. There has been a reevaluation of component parts of the whole of medicine. Perhaps the most spectacular changes were noted in the field of psychiatry. The realization that emotions and psychiatric states play an important role in the causation of many bodily ills has brought about the metamorphosis of a minor specialty to a major one. Under proper, well informed and forceful leadership, psychiatry has passed through the period of growing pains and confused adolescence and has flourished into full manhood. Perhaps in just as spectacular fashion, physical medicine and rehabilitation under the able leadership of the Council on Physical Medicine and Rehabilitation, the Baruch Committee and the dynamic personality of Dr. Howard Rusk are rapidly growing and attaining stature.

THE STATUS OF DERMATOLOGY AND SYPHILOLOGY

Unfortunately, the specialty of dermatology and syphilology has not been keeping abreast of the pace setters. I do not want to convey the impression that there has been no progress in this specialty. Nothing could be further from the truth. But I do want to point out that many medical schools have been shortsighted in regard to the importance of dermatology and syphilology. Approximately two decades ago a deliberate and unwise campaign was initiated to dismember our specialty. Dermatology and syphilology were separated, with syphilis being considered a subspecialty of internal medicine; and then the department of medicine in some schools engulfed dermatology. This situation in whole or in part exists at such medical schools as Johns Hopkins, Cornell and New York University. The same situation existed in the armed services of the United States during World War I, and it was not corrected until the beginning of World War II. Dermatology and syphilology were branches of urology in both the Army and the Navy. Both services soon came to the realization that a separate department of dermatology and syphilology was essential for the proper diagnosis and treatment of skin diseases.

There is now an active movement going on in many medical schools to eliminate dermatology and syphilology as a separate department and to include these under internal medicine with the same status as cardiology or any other subspecialty of medicine. Dermatology and syphilology are no more subspecialties of medicine than is modern psychiatry or neurology. It is just as illogical to assume that physical medicine and rehabilitation are subspecialties of orthopedic surgery, general surgery or internal medicine. These are all component parts of the whole of medical knowledge. Some medical schools are even advocating the elimination of teaching the specialties. This retrogressive tendency impedes rather than stimulates medical progress.

Perhaps it is well to pause and reflect for a moment on the question, what is the essential function of a medical school? Every one agrees that a medical school exists primarily to teach all branches of medicine and surgery and secondarily to initiate and conduct research and experiments. Medicine has progressed and has become so extensive that some of the basic pedagogic concepts need revision. The more progressive and modern medical schools advocate greater emphasis on scientific medicine, with detailed study of the latest biochemical advances; the more conservative medical schools are putting emphasis on turning out good general practitioners. It seems to me that the primary function of a medical school is to impart to a student those principles and concepts which would make him a good dispenser of the benefits of general medicine and surgery. A medical student should be given the opportunity to study all the practical phases of all the special divisions of medicine and surgery so that after completion of his studies he can catheterize a patient, remove cerumen from the external auditory canal, recognize and treat effectively the common and simple conditions that occur in everyday practice. Elimination of the teaching of the specialties and elimination of rotating internships with ambulance services at our teaching hospitals are curtailing the facilities for training good general practitioners. It is hoped that those hospitals which are going to establish residencies in general practice will give due consideration to dermatology and syphilology, since these are apt to constitute about 15 per cent of cases in general practice.

REVISION OF TEACHING CONCEPTS

The time is at hand to revise concepts of undergraduate medical teaching. The American Medical Association announced in 1948[1] the creation of a joint committee made up of members of the Council on Medi-

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From the New York Polyclinic Medical School and Hospital.

Read before the Section on Dermatology and Syphilology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

[1] Secretary's Letter, no. 84, American Medical Association, Nov. 22, 1948.

cal Education and Hospitals of the American Medical Association and the Association of American Medical Colleges to survey medical education. This committee started to function Jan. 1, 1949. So important is this survey that the committee appointed Dr. John E. Deitrick of New York to be its full time director and the survey is to extend over a three year period.

Up to the present time all phases of medical education have evolved about the medical school. Obviously, the medical schools with their limited budgets, space and personnel cannot undertake to carry on efficiently all branches of medical education. It seems to me that there are three separate phases to modern medical education: (1) undergraduate medical education for training young men to be general physicians; (2) postgraduate medical education for training specialists, and (3) continuation medical education for both general practitioners and specialists. Medical schools, with few exceptions, are integral parts but independent and autonomous units of a University; they are set up with their own deans and are admirably equipped to teach young men and women the basic principles of medicine and surgery and to carry out research work in the basic sciences and to a limited extent in the clinical branches of medicine and surgery.

NEED FOR POSTGRADUATE MEDICAL SCHOOLS

The medical schools and some teaching hospitals have had the responsibility of carrying on postgraduate and continuation courses. The demand for postgraduate study far exceeds that for undergraduate work, and most medical schools are not prepared and equipped adequately to carry on postgraduate teaching. There are about 20,000 students enrolled in the medical schools of the United States. During the year 1947-1948, nearly 83,000 physicians were enrolled for some form of postgraduate or continuation course.[2] The demand for postgraduate education is growing rapidly. Therefore I propose the establishment in a few large medical centers of a postgraduate medical school with its own faculty and dean to be part of a university setup and yet independent of the undergraduate school of medicine. It shall be the function of the postgraduate medical school to train physicians for the specialties and to give continuation courses to both specialists and general practitioners. I advocated this plan when I was a member of the New York Post Graduate Medical School, and I am happy to learn that through the generous contributions of the Samuel H. Kress Foundation such a postgraduate medical school is now in the process of formation as a part of the New York University-Bellevue Medical Center in New York.

What will be the effect of such a program on medicine as a whole? In my opinion, it will be an immediate impetus to advancement in every phase of medical knowledge. It will open up new horizons, increase opportunities for study and research. It will stimulate every physician in the community to better himself. There will be more rapid dissemination of new knowledge and of information on new experiments and discoveries through special publications of the new postgraduate medical schools. The substandard hospitals will be improved because they, too, can be utilized for postgraduate education. There will be more opportunities for more physicians to participate in educational activities. This stimulating influence in all medical activities will be diametrically opposite to the existent and growing tendency to stifle teaching, research and progress, especially in the so-called minor specialties of medicine, because of lack of funds, facilities, laboratories, clinical material and the many other items that are essential to research. The minor specialties then will not be relegated to the scrap heap of medical education, but will be given the stimulus they need. Continuation courses and postgraduate training for specialization will no longer be a burden to some medical schools. Chesney[3] in a recent article stated that the requirements of the specialty boards in regard to the basic sciences come at a time when the medical schools are struggling with diminished resources and are still short of faculty personnel with which to carry on their heavy obligations of undergraduate medical education and research. There is general agreement with this opinion, and the solution is the development of a few well distributed postgraduate medical schools within the framework of a University and independent of the undergraduate medical school, its faculty and dean.

PLACE OF SPECIALTY IN MEDICAL CURRICULUMS

The general practitioner through no fault of his own is poorly trained in the recognition and treatment of skin diseases. This is to be construed as an indictment not of the family physician but rather of some phases of our medical education. I made a survey of the teaching of dermatology and syphilology in our medical schools. From the catalogs of sixty-one medical schools, which were obtained by mail, the required number of hours of instruction in dermatology and syphilology for the third and fourth year medical students was compared to the total number of hours of instruction for the two clinical years. The time allotted to teaching dermatology and syphilology to juniors and seniors in medical schools was not uniform. The total number of hours devoted to the teaching of dermatology and syphilology varied from 13 to 128 and the total number of hours devoted to the teaching of all clinical subjects varied from 1,955 to 3,420. The information sought was complete in only eighteen catalogs and this is summarized in table 1. In one school only 0.4 per cent of the total hours of clinical instruction was devoted to dermatology and syphilology; in another school the percentage was 4.6; an average for the eighteen schools was 2.3 per cent. It is also noted that in six of these eighteen schools the department of dermatology and syphilology is a division in the department of medicine. In one catalog, the department of dermatology is not even listed in the index, but information relative to instruction in dermatology was found under medicine. There appears to be no obvious explanation for this variation on the basis of need. However, it is striking that where the number of hours of instruction in dermatology is greater and the courses are more comprehensive the dermatologic faculty is an eminent one and the department is separate from other medical divisions. It was amazing to find that, of the sixty-one schools, thirty-one have a separate department of dermatology and syphilology, seventeen have a division within the framework of the department of medicine and thirteen have no autonomous department at all, but the subjects are stragglers in the department of medicine. It is no wonder that the family physician cannot cope with simple everyday dermatologic problems. I am willing to concede that in some instances in which the hours of instruction are adequate the method of teaching may not be adequate.

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[2] Medical Education in the United States and Canada, J. A. M. A. **137**: 25 (Sept. 4) 1948.

[3] Chesney, A. M.: Some Impacts of the Specialty Board Movement on Medical Education, J. A. Am. M. Coll. **24**: 83 (March) 1948.

In a report of the Medical Curriculum Committee of the British Medical Association published in 1948 [4] there is confirmatory evidence of the situation in the United States. The report starts out with the statement: "There appears to be general agreement that the instruction in dermatology given in the undergraduate medical school is inadequate. This is a serious matter when it is remembered that the incidence of diseases of the skin in general practice ranges from 5 to 10 per cent of all cases." Later in the report there appears the following statement: "The essential defects of most present courses are, first, the failure to train the student in the basic principles of dermatology. . . ."

Diseases of the skin represent about 15 per cent of the total daily practice of the general physician. The records of the surgeons general of the army and the navy lend support to this statement. Pillsbury, Sulzberger and Livingood [5] make the following statement in the "Manual of Dermatology": "It can be conservatively stated that some 20 to 25 per cent of all diseases in the Armed Forces are the object of dermatosyphilologic management." In other publications and discussions of this subject by Pillsbury and Livingood,[6] Cole [7] and Canizares,[8] the ratio of skin diseases to other diseases runs even higher. Is there any doubt as to the necessity of more and better teaching of dermatology and syphilology to medical students? I think not. The observations of physicians in the armed services in all parts of the world cannot be refuted.

TABLE 1.—*Relation of Hours Spent on Study of Dermatology and Syphilology to Those Spent on All Other Clinical Subjects During the Junior and Senior Years at Medical School*

School	Hours Instruction in Jun. & Sen. Yr.		Percentage Instruction in D. & S.	Status of Dermatology and Syphilology		
	D. & S.	Clin. Sub.		Separate Dept.	Division in Dept. Med.	Dept. Med. Only
1	57	3,420	1.3	x	..	..
2	128	3,007	4.2	..	x	..
3	49	2,694	1.4	..	x	..
4	29	2,256	1.3	x	..	..
5	84	2,732	3.0	..	x	..
6	48	2,108	2.3	..	x	..
7	77	2,430	3.1	..	x	..
8	56	2,763	2.0	x	..	..
9	13	2,855	0.4	x	..	..
10	115	2,500	4.6	x	..	..
11	36	3,168	1.1	x	..	..
12	46	2,319	1.9	x	..	..
13	79	2,680	2.9	x	..	..
14	72	2,310	3.1	x	..	..
15	82	2,188	1.0	x	..	..
16	71	1,955	3.6	x	..	..
17	80	2,595	3.0	..	x	..
18	48	2,463	1.5	..	..	x
			2.3 (Average of hours of instruction in 3d and 4th years allotted to D. & S.)			

PERCENTAGE OF DERMATOLOGIC CASES

The general practitioner has expressed a real desire to know more about dermatology and syphilology because he is confronted daily with problems pertaining to the skin. Even a hurried perusal of original articles in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and the section on Queries and Minor Notes of the same journal will convince those who are skeptical and prejudiced. An exhaustive survey of these sources for the past ten years (1939-1948) revealed the interest of the general physician in dermatology. Table 2 was prepared to show the total number of questions and notes arranged in years compared to the total number pertaining to dermatology. In ten years 5,527 questions were asked and 765, or 13.8 per cent, pertained to dermatology and syphilology. This figure is striking because it is similar to the incidence of skin diseases in the armed services and in civilian practice. Yet only 2.3 per cent of total time spent in training during the junior and senior years is devoted to dermatology and syphilology. Obviously, more time and better methods are required for teaching dermatology to medical students.

TABLE 2.—*Relation of the Total Number of Questions to Those Pertaining to Dermatology and Syphilology in Queries and Minor Notes* for Each Year from 1939 to 1948*

	Total No.	Pertaining to Dermatology	
		Number	Percentage
1939	792	125	15.8
1940	664	92	13.8
1941	543	82	15.1
1942	637	108	16.9
1943	445	54	12.1
1944	334	50	14.9
1945	357	46	12.8
1946	453	49	10.8
1947	604	67	11.0
1948	698	92	13.2
Total	5,527	765	13.8

* Section of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The need for more and better training in dermatology is further emphasized by the fact that of the total number of original and special articles and clinical notes appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION during the years 1939 to 1948, 7.6 per cent pertained to dermatology. The totals gathered year by year appear in table 3.

TABLE 3.—*Relation of the Number of Original and Special Articles and Clinical Notes Pertaining to Dermatology and Syphilology to the Total Number Each Year from 1939 to 1948*

Year	Total No.*	Articles on Dermatologic Subjects *	
		Number	Percentage
1939	619	47	7.5
1940	601	45	7.5
1941	567	43	7.5
1942	554	33	5.9
1943	495	48	9.6
1944	488	30	6.1
1945	475	31	6.5
1946	403	42	10.4
1947	415	35	8.4
1948	407	26	6.3
Total for 10 yr.	5,024	380	7.6

* Articles appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

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[4] The Training of a Doctor, report of the British Curriculum Committee of the British Medical Association, London, Butterworth & Co., Ltd., 1948, chap. 26.

[5] Pillsbury, D. M.; Sulzberger, M. B., and Livingood, C. S.: Manual of Dermatology, Philadelphia, W. B. Saunders Company, 1942.

[6] Pillsbury, D. M., and Livingood, C. S.: Experiences in Military Dermatology, Arch. Dermat. & Syph. **55**: 441 (April) 1947.

[7] Cole, H. N., in discussion of article by Pillsbury and Livingood.[6]

[8] Canizares, O.: Cutaneous Diseases in Army Air Force Personnel, Arch. Dermat. & Syph. **56**: 346 (Sept.) 1947.

Some of the errors in the diagnosis and treatment of commonly occurring skin diseases can be attributed to poor training. Many physicians have had little opportunity for adequate dermatologic training in medical schools and during internship. Important conditions like cutaneous cancers and radiodermatitis are often misdiagnosed by the general physician. Common moles are confused with malignant melanomas. Some common diseases like dermatophytosis or poison ivy dermatitis are made worse by overtreatment with remedies which are generally too strong. Overtreatment of simple inflammatory or parasitic diseases was so frequent in the armed services as to rate a separate classification as a type of cutaneous disease. Even in civilian life overtreatment of common skin diseases is responsible for a large number of cutaneous ailments. During the past several years Underwood,[9] Gaul,[10] Collins and Mosby[11] have written extensively on "Overtreatment Dermatitis." Most dermatologists will readily admit that a portion of their everyday practice comprises the treatment of cutaneous afflictions caused by overzealous or improper treatment of common skin diseases. If more attention, time and prominence is given to dermatology in our medical schools, there will follow a diminution in incidence of these common errors.

COMMENT

Failure to give dermatology proper recognition may be caused by two factors: first, the inertia of the dermatologist himself and, second, the erroneous concept that dermatologists are externists. It is the policy of some medical schools to refuse to acknowledge that a dermatologist is essentially an internist with special knowledge regarding the external manifestations of systemic diseases. Most cutaneous diseases have no known systemic links, and investigations are constantly going on to ascertain the causes of such common diseases as psoriasis, acne vulgaris, lichen planus, sarcoid and the multiplicity of cutaneous manifestations due to such organisms as Mycobacterium tuberculosis and Treponema pallidum. The scope of dermatology is immense and embraces, besides diagnosis, highly specialized dermatopathology, allergy, mycology, parasitology and radiology. A dermatologist with a broad background is better qualified to head a department of dermatology and to teach dermatology to medical students than is a professor of medicine whose interests and attention are taken up with nondermatologic subjects.

SUMMARY

Because the medical schools do not devote sufficient time to the teaching of dermatology and syphilology, the general physician is poorly trained in this specialty. As a result of this poor training, the incidence of "overtreatment dermatitis" in the armed services and in civilian life is higher than it should be. The family physician wants more training in dermatology. He has expressed himself thusly by making inquiries pertaining to dermatology, and these are published in the section on Queries and Minor Notes of The Journal of the American Medical Association. Evidence has been collected to show that the incidence of diseases of the skin in general practice is about 15 per cent. Dermatology and syphilology should not be dismembered, and they are not subspecialties of internal medicine but a highly specialized component part of the whole of medicine. The facilities of most medical schools are no longer adequate to meet present day demands of postgraduate medical education for specialist training and for continuation courses for specialists and general practitioners. The development in some medical centers of completely autonomous and independent postgraduate medical schools with their own deans and faculties is advocated to meet the growing demand for postgraduate courses.

40 East Sixty-First Street.

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[9] Underwood, G. B., and Gaul, L. E.: Overtreatment Dermatitis in Dermatitis Venenata Due to Plants, J. A. M. A. **138**: 570 (Oct. 23) 1948.

[10] Gaul, L. E.: Overtreatment Dermatitis, J. A. M. A. **127**: 439 (Feb. 24) 1945.

[11] Underwood, G. B.; Gaul, L. E.; Collins, E., and Mosby, M.: Overtreatment Dermatitis of the Feet, J. A. M. A. **130**: 249 (Feb. 2) 1946.

THE DEVELOPMENT OF STANDARDS IN DERMATOLOGY

C. GUY LANE, M.D.
Boston

In the early practice of medicine men entered the field of medicine by reason of their interest in the treatment of the sick. Their ability and, as time went on, their experience and personality determined their career. There were no other standards. Later, medical schools and hospitals were established; prescribed training, degrees and licensure appeared. Thus there gradually developed accepted standards for the practice of medicine in general. Soon physicians became interested in a particular phase of medicine, and the specialties were born. Still the physician's interest, his ability and, as always, his personality were factors in his success in his specialty and his standing in his community.

It was gradually found that instruction and a wide experience could be obtained under the earlier specialists of the Old World, and at the time the American Dermatological Association was formed, in 1876, about one third of the charter members had obtained their training in that way. However, no definite duration or content of such training was accepted as a measure of their competency in this special field. These dermatologists gradually took younger men into their offices as assistants for varying periods, and clinics where dermatologic experience could be obtained were developed in this country. At the time of World War I and thereafter, graduate training in dermatology progressed rapidly without uniform standards, for there were differing periods of time and instruction given under various chiefs in different clinics and in different cities. Interest, ability and personality still were the important factors, and it was the doctor who decided whether he was competent to practice his specialty. In other words, until 1932 there were no particular standards to be met in training for the practice of dermatology. Graduate instruction was an individual matter, perhaps serving under a former teacher, gaining experience in a large clinic or going abroad for a period. Those who could afford it went abroad, but the period of stay varied perhaps from six months to three years. Often the mere fact of having spent time abroad, rather than ability or competence, was considered of importance in establishing a physician as a specialist. They could claim to be specialists without good or even mediocre training.

Then, about 1932, when there were rumors of possible state licensure of specialists, perhaps controlled by

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Read as the Distinguished Lecture before the Section on Dermatology and Syphilology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

a state authority or a state medical association, it was considered preferable that certain standards be established by dermatologists on a voluntary basis to determine the competency of physicians for practicing the specialty. Such a step had been taken by the ophthalmologists in 1915 and by the nose and throat specialists and the obstetricians more recently.

With the support of the American Dermatological Association and the Section on Dermatology and Syphilology of the American Medical Association, a board of certification was set up for the specialty. Their first duty, and their continual duty ever since, has been the establishment of standards of various kinds with the main general purpose of improving the quality of practice in dermatology and syphilology in this country. There are many phases of this main purpose which are worth reviewing in more detail at this time.

STANDARDS FOR PERSONS ENTERING DERMATOLOGY

At the very beginning it seemed necessary to adopt some general standards by which physicians already established in dermatology could be recognized as having attained competency in the field. After much discussion three criteria were accepted. It was considered that those who had limited their practice to the specialty for a minimum of fifteen years should be competent; second, that those who had attained the rank of professor in a recognized medical school should be competent, and third, that those who had been investigated by the Committee on Membership of the American Dermatological Association and accepted as members should be competent. Any physician with one of these qualifications who had had good training in dermatology and syphilology and was limiting his practice to the specialty was thought to be competent in the diagnosis and treatment of diseases of the skin and competent to act as a consultant when needed. It was taken for granted that their qualifications should include such items as high ethical and professional standing, graduation from an approved medical school and licensure by an individual state or by the National Board of Medical Examiners. Such standards, of course, were to apply to all aspirants.

Much study was given not only to the duration of adequate training but especially to the content of the training period, and much time was consumed and many drafts were made before a "Syllabus of Graduate Training in Dermatology and Syphilology" was issued. This booklet attempted to outline the field to be covered in instruction, but at the same time to provide freedom for the chiefs of departments in the details and methods of actual instruction. It was realized that it would be impractical to standardize a graduate curriculum in all its details for every single graduate department in view of the varying conditions in different medical schools and the fact that excellent dermatologists have been trained under various systems.

In determining whether certain standards of proficiency for groups other than the aforementioned ones are fulfilled, it is inevitable that tests or examinations be developed, undesirable as they may seem. While tests are of value in determining the competency of such physicians, it seemed advisable to establish standards of eligibility for the examinations. Two groups were decided on: first, dermatologists with a satisfactory period of training and ten years or more of limitation of practice to dermatology and, second, those in the field of dermatology for five years. While the first group has been discontinued, I raise the question whether consideration should be given to the reestablishment of this group as a method of providing experienced dermatologists safe for practice and consultation. It seems possible that some method can be found which would weed out those who are not proficient; the greater experience and longer study by these physicians can provide an excellent background for specialization. A standard for the younger group who had practiced dermatology for five years was a definite period of training and a written and oral examination. This training period at first consisted of two full years, with at least one year in a well recognized clinic or as an assistant in the private practice of a well known specialist in the field. By 1935 there was added to this standard an internship of not less than a year in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association, on the ground that the better the knowledge of general medicine is, the better the background for the practice of any specialty. Later the three year period of training was adopted as a minimum in which a good student could acquire a satisfactory background for competency as a specialist in dermatology and as a consultant.

The more careful selection of graduate students and residents who desire to specialize in dermatology and a decision not to accept them simply because of their interest in the subject, though interest is necessary, together with an attempt to attract well trained physicians into cutaneous medicine both in the clinical phases and the basic fields will, in my opinion, contribute most to the advancement of standards in dermatologic practice.

STANDARDS FOR INSTITUTIONS WHERE GRADUATE TRAINING WILL BE CONDUCTED

By 1935, or even earlier, there was concern over those institutions which could provide a satisfactory "two full years of special training devoted exclusively to dermatology and syphilology." At that time these facilities were reviewed—the first survey of dermatologic training facilities in the country. When the three year plan of training was under serious consideration, it seemed necessary to set up certain standards to be attained by institutions planning a satisfactory three year training period in dermatology. Although rigid specifications could not be set, it was determined that such institutions would probably be found to have the following qualifications: a university affiliation; a satisfactory program of instruction in the basic fields related to the specialty; proper supervision of students; a well formulated teaching program; adequate provision for dermatologic bed patients; at least 1,000 new patients a year in the outpatient clinic; adequate equipment; satisfactory laboratory and investigative facilities; satisfactory medical library facilities; a chief who has been certified by the Board and who has the rank of professor or its equivalent in an approved medical school, and the majority of the members of the staff certified by the Board.

The evaluation of such institutions and their facilities has been accomplished by a cooperative study by the Board and the Council on Medical Education and Hospitals of the American Medical Association.

More recently standards for institutions have been reviewed; and all the institutions in the country in which physicians are trained in dermatology and syphilology have been reconsidered and classified with regard to the type of training provided. This survey has been completed so that the status of all institutions training graduate students in dermatology is now definitely established. The standards adopted in the previous survey were in general applied in this classification, and perhaps somewhat more strictly.

STANDARDS FOR PRECEPTORS

It has always been recognized that excellent training could be obtained by a young physician working in the office of an older physician with a large experience, and provision has been made for such training in a portion of both the two year and the three year training period. As time went on, more thought was given to the difficult matter of standards for this type of training; about 1942 there was begun a more formal consideration of dermatologists who could be considered as preceptors or as qualified to train students adequately in dermatology and syphilology. It was believed best that only one year of the three years of training should be spent under such a preceptor, but this time might be spread over two years, the student working in the preceptor's office for half of the day and in an approved institution for the other half. It was believed that such a preceptor should be a certified specialist, competent to supervise the training of a candidate either in his office or in a recognized clinic or laboratory. It seemed obvious that the preceptor's office should have adequate equipment for satisfactory instruction in diagnosis and therapy, that he should have an adequate number of patients for teaching purposes, that sufficient time should be arranged for conferring about such patients and that opportunities should exist for investigation as well as for discussion of individual patients. Such standards seemed definitely necessary in order to provide adequate instruction and to ascertain that the student really had the opportunity to acquire knowledge and did not spend too great a proportion of his time on routine office practice for his preceptor. In regard to preceptors, and for that matter instructors of dermatology in general, some provision should be made for exposure at least to the matter of the technic of teaching. Some men are naturally good teachers, others are poor teachers, but too many young assistants and instructors are turned loose on students without adequate instruction in the exact material to be taught, the arrangement of the material, the technic of presentation and the use of cases, charts, diagrams and tables. Some type of affiliation with the department of education of a university, or at least conferences with a successful teacher, could contribute much to the efficiency of instruction in dermatology as well as in other subjects.

STANDARDS FOR MILITARY SERVICE

During the latter part of World War II there was considerable discussion concerning the training and experience which a dermatologist might have obtained in the Army, Navy or Public Health Service during the war. What could be called training and what experience? This factor was considered in terms of credit which the young dermatologist would receive toward eligibility for examination. It was decided that he would receive full credit for any satisfactory dermatologic training already completed when he received his commission. He would also be credited with one year of the two years' required experience after having served one year of military medical service. However, it was determined that the extent to which medical experience in the Army or Navy would count toward required training would have to be decided in each case on evidence submitted by the medical officer. There was such a wide variation, it was found, in the conditions of dermatologic services in the Army, Navy and Public Health Service that no general standards could be adopted which would be satisfactory.

UNDERGRADUATE STANDARDS

There is now under way a survey of undergraduate dermatologic training to determine its adequacy in properly preparing the student for general practice, to determine its place in the curriculum and to determine the best methods of teaching, with the hope that eventually standards of undergraduate instruction will be improved with a resultant betterment of cutaneous diagnosis and therapy in general practice.

In addition, various postgraduate assemblies over the country, in which dermatologists have presented the latest developments to general practitioners, have also contributed much to improving the standards of dermatology in general practice.

It is my opinion that if this is not to be a nation of specialists and if the general practitioner is to have adequate knowledge to deal with cutaneous abnormalities, the student will need to have a more adequate amount of time in the curriculum for dermatologic subjects and adequate instruction to be able to manage the commoner diseases of the skin, that is, at least 85 per cent of cutaneous manifestations. In my opinion, present undergraduate standards of dermatologic instruction in numerous schools are not high enough to enable graduates to diagnose and manage properly the majority of cases of cutaneous disease.

ADDITIONAL ITEMS AFFECTING STANDARDS OF PRACTICE

In addition to such standards for individuals and institutions, other factors have contributed to improvement in the practice in dermatology. Since the establishment of the American Academy of Dermatology and Syphilology in 1938 much has been accomplished in two ways: first, by the courses and symposiums conducted as a part of the educational program; second, in the presentation of material by distinguished physicians in other fields to dermatologists. This association has accomplished much in the way of improving the standards of practice in dermatology. The Section on Dermatology and Syphilology and the Society for Investigative Dermatology have also contributed much by their careful selection of presentations for their annual meetings from the large number of applications and by providing forums for the discussion of many phases of dermatology. The many local and sectional societies deserve much credit for contributing to the maintenance of dermatologic standards. Various courses given in different parts of the country—pathology, mycology—have been immensely valuable in raising the standards in these subjects.

As far as dermatologic publications are concerned, careful selection of papers by the editorial boards of the *Archives of Dermatology and Syphilology* and the *Journal of Investigative Dermatology* has resulted in an extremely high standard of articles, although the delay in appearance is often long.

STANDARDS FOR HOSPITAL CARE

The hospital care of patients with cutaneous disease on a general ward is usually poor. There are few standards of hospital care for dermatologic patients. Comparatively few hospitals have dermatologic services, probably not more than twenty-five in all, and in these hospitals there is adequate opportunity for personnel to be trained in the proper care of dermatologic patients. As a matter of fact, nursing care is a most important part of the treatment of extensive and serious cutaneous involvement as well as of many less involved cases. The average patient often knows more than the nurse about the means of providing for his own care and comfort when he is admitted to a general ward.

STANDARDS FOR NURSES

As a rule only nurses trained in a dermatologic ward have any concept of the proper application of compresses, baths, ointments and lotions in providing adequate comfort to the patient with extensive skin disease. It is extremely difficult to get good nurses for dermatologic patients, and it is often difficult to obtain nurses who will care for such patients, especially nurses who know how to care for these patients. The need for more training in this field for at least a few nurses in every hospital is grossly evident. Hospital care and nursing technic for patients with cutaneous disease deserve much more study by hospital and training school authorities in cooperation with dermatologists in order to provide a higher standard of care in this modern age.

COMMENT

I have ended this review on the phase which perhaps requires the most consideration today, but it can be seen that over a period of some seventeen years the status of dermatologic graduate training has improved by reason of standards established concerning graduate training of the individual, the institutions in which training is given, the persons who give the training, military training and experience during the war and various other factors.

But what of the future? Not only is it true of the medical student, but of the dermatologic graduate student, that the time is approaching, if not already reached, when the amount of material to be taught will be so vast and complicated that the student will be unable to properly digest it all. In the development of future standards, therefore, it will be necessary to sift out the details and data which must be taught and to emphasize to a greater degree the means and methods by which rational conclusions on problems may be reached and the procedures by which the desired information can be readily acquired in dealing with the many diagnostic, therapeutic and preventive problems which concern the dermatologist today.

Hopkins in quoting the phrase "mere acceptance of the didactic word," and O'Leary in pleading for a "liberal and elastic program of training" emphasized this aspect of our medical education. It may be that as time passes it will be advisable to develop two types of standards, or at least two variations of a standard—one for those who will be routine practitioners and possibly teachers; another for those who will be the real investigators of the future and the real leaders in the progress of dermatologic knowledge.

Along with this progress in dermatologic standards which have been reviewed, there is a wider interest in cutaneous medicine. There is more emphasis on the general relation of the skin to the bodily economy and infinitely more emphasis on the fundamental basic relations of cutaneous functions and abnormalities to general medicine. As time passes it is obvious that the amount of knowledge of the skin as well as the other organs will increase, that methods of teaching will alter and improve, that standards of training and practice for individual physicians, for preceptors and for institutions will be raised. Standards are often like ideals—they are horizons at which to aim. One never quite reaches them. If they are attained, they need to be advanced. Standards are not static—they improve with the advance of knowledge.

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ENCEPHALOPATHY FOLLOWING PERTUSSIS VACCINE PROPHYLAXIS

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In a recent communication, Byers and Moll[1] called attention to the occurrence of manifestations of serious cerebral damage which they have encountered in a number of children as a reaction to the administration of prophylactic pertussis vaccine. The close similarity of the clinical features among more recently observed cases prompted them to reinvestigate the clinical records of similar material at the Children's Hospital in Boston for the preceding period of ten years. They have analyzed clinical histories of 15 children who, although normal prior to receiving an injection of the vaccine, manifested alarming symptoms such as convulsions and listlessness shortly afterward and in the subsequent course exhibited residuals in the form of arrested development and recurrent convulsions.

In 12 of these children the vaccine[2] was known to have been given in the usual dose. The reaction appeared after the first, second or third dose and in one instance after the fourth dose. The acute symptoms appeared in some instances within the first six hours, in one case as early as twenty minutes after the injection, and in others after a delay of from eight to twenty-four hours. The acute phase lasted from thirty-six hours to ten days. In 6 of 8 cases pneumoencephalograms showed enlargement of the ventricles. In all these cases follow-up studies disclosed evidence of cerebral damage. Two of these patients died of pneumonia; 1 autopsy was performed and was reported to have revealed "diffuse atrophy and gliosis of the brain."

The foregoing report is not the first to record untoward reactions following inoculations with pertussis vaccine. Thus, Madsen[3] encountered 2 fatal cases in which the infants had convulsions one or two hours after the injection of fluid vaccine; autopsies did not reveal "an adequate cause of death." Other investigators[4] have reported similar reactions which varied in severity, with recoveries on one hand and an occasional fatal issue on the other. Investigating the results

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[1] Byers, R. K., and Moll, F. C.: Encephalopathies Following Prophylactic Pertussis Vaccine, J. Pediat. **1:** 437, 1948.

[2] The products of eight different manufacturers were used.

[3] Madsen, T.: Vaccination Against Whooping Cough, J. A. M. A. **101:** 187 (July 15) 1933.

[4] Doull, J. A.; Shibley, G. S., and McCleland, J. E.: Active Immunization Against Whooping Cough, Am. J. Pub. Health **26:** 1097, 1936. Taylor, H. W.: Reaction Following Injection of Pertussis Vaccine-Sauer, Arch. Pediat. **55:** 572, 1938. Werne, J., and Garrow, I.: Fatal Anaphylactic Shock: Occurrence in Identical Twins Following Second Injection of Diphtheria Toxoid and Pertussis Antigen, J. A. M. A. **131:** 730 (June 29) 1946. Kendrick, P., and Eldering, G.: Study in Active Immunization Against Pertussis, Am. J. Hyg. **29:** 133, 1939. Nakamura, T.: Experimentelle Studie über die Keuchhustenmeningoencephalitis, Mitt. a. d. med. Akad. zu Kioto **28:** 596, 1940.

of vaccination against whooping cough, Toomey[5] sent out a questionnaire to a large number of pediatricians in several parts of this country and received information on 38 well authenticated instances in which children had convulsions after receiving an injection of pertussis vaccine; of these at least 23 recovered completely but 2 died.

It is not without significance that, with few exceptions, convulsive seizures and lethargy dominate the clinical manifestations in the affected child. These are often coupled with other features indicative of grave damage to the brain.

Two infants have recently been observed at the Mount Sinai Hospital who manifested symptoms and signs of cerebral involvement after the injection of pertussis vaccine. One child had received the standard fluid vaccine, but the other was given the vaccine known as pertussis antigen (a detoxified formolized filtrate). In the first case, the acute symptoms subsided but the child was left with well defined residuals from which he apparently is making an exceedingly slow recovery. In the second case the clinical course was that of progressive decline until death. The alarming character of this reaction to a widely employed prophylactic agent prompted us to report the following 2 cases.

REPORT OF CASES

CASE 1.—*History.*—R. W., a male infant aged 9 months, was brought to Mount Sinai Hospital Jan. 10, 1949. Three months previously (Nov. 8, 1948) the child was given a second injection of pertussis vaccine and shortly thereafter became alternately irritable and drowsy; for the first time since birth he slept through the entire night. There was no rise in temperature. An abrupt change in the child's behavior was noted by his mother. Before the second injection he had played and reacted normally, but afterward he no longer played, would not reach out for objects, became indifferent to his environment and slept for long intervals during the day. On the tenth day after the second injection he was seized by repeated convulsions, which were characterized by an abrupt development of slow clonic movements of the head and the left arm. These attacks would last about five minutes and recur every two hours during the first few days. After such episodes the child appeared stuporous.

Examination.—The child was able to sit up. He was irritable but paid no attention to his surroundings and did not reach for objects. When one was placed in front of him he would only gaze at it. The right pupil was larger than the left and was fixed to light. Otherwise the neurologic examination revealed normal conditions. A psychometric investigation indicated that the child's development of coordination was roughly in keeping with his chronologic age. However, response to persons was definitely abnormal; he would show no sign of recognition. There was no response to play, sound or light, although apparently perception was present. The circumference of the head was 17 inches (43 cm.).

Course.—An electroencephalogram which was made Jan. 15, 1949 showed diffuse cerebral dysfunction regarded as consistent with the diagnosis of postencephalitic (vaccine) encephalopathy.

Electroencephalography was repeated on January 26, and the record was like that seen in convulsive disorders. The child seemed to improve and was given glutamic acid. The convulsive episodes continued to recur once every two days.

A third electroencephalogram was made February 6 and was reported to show a fairly normal record. A neurologic reinvestigation on February 9 "showed no evidence of mental deficiency and no paralysis." The diagnosis was encephalopathy, cause unknown.

Further improvement was recorded on February 21. A pneumoencephalogram at this time was considered to show normal conditions except for the absence of air over the cortex. Another psychometric study was made on March 1, and the report stated: "Although mentally the child seems to be normal, it is difficult to attract or hold his attention. The abnormalities are emotional."

There was no elevation of temperature at any time. Blood chemical studies, serologic examination and the blood cell count were within normal limits. The cerebrospinal fluid was normal.

The child left the hospital on March 5, 1949. He has been seen several times in the follow-up clinic. When examined on May 5, he seemed to have made some further gain during the preceding month. The convulsive episodes now occurred about once every three or four days and lasted about ten minutes. After each episode the child was listless and slept most of the day, but the following day he was more alert. He walked about in his playpen, played to a limited degree and seemed to be more aware of persons and his surroundings. Electroencephalography was repeated and was reported to reveal normal conditions. When the child was seen again on May 28, his mother reported further improvement, except that he had peculiar sleeping habits: he would sleep from 1 p. m. until 1 a. m., remaining awake the rest of the time.

The clinical course in this case justified the diagnosis of postvaccinal (possible allergic) encephalopathy and allows of the conclusion that in this instance the disease process was to a degree a reversible one. It is as yet too early to say whether there will be a complete return to normal development.

CASE 2.—*History.*—P. L., a male infant aged 8 months, who was developing normally except for recurrent infections of the upper part of the respiratory tract, entered the Mount Sinai pediatric service on Sept. 26, 1948, because of convulsions and stupor of six hours' duration. Six weeks before admission he had received the first injection of pertussis antigen vaccine (lot 1905-48 F. of a detoxified formolized filtrate). He immediately reacted by a rise of temperature, and he soon became irritable. This irritability, which lasted for two weeks, was attributed to a cold. His mother reported this reaction to the attending physician. Nevertheless, a second injection of the same vaccine was given to the child on the day preceding his admission to the hospital. After he received this injection he fell asleep. Three hours later he awakened and cried throughout the remainder of the night. There was no febrile reaction. Eighteen hours after the second injection he passed through a generalized convulsion, which lasted about half an hour and was followed by stupor.

Examination.—The patient was a well developed infant, who was lying listlessly in bed, totally unresponsive. The head circumference measured 18 inches (45.7 cm.). There was a profuse nasal discharge. The lungs were clear. The heart was normal. The pupils reacted to light. The fundi were normal. While being examined he passed through a generalized convulsion.

Laboratory Data.—A lumbar puncture yielded normal cerebrospinal fluid, under normal pressure. The blood sugar was 40 mg. and the serum calcium was 9.6 mg., per hundred cubic centimeters. Reactions to all serologic tests were within normal limits.

Course.—The child was placed under an oxygen hood and given dextrose and calcium intravenously. The convulsions persisted until intravenous amobarbital sodium was administered. Several hours after admission the temperature rose to 105 F., and it remained at this level for the next three days. The child's general condition remained unchanged, and because of his stuporous condition he had to be fed by gavage. On the sixth day in the hospital his fontanel was observed to be bulging. A bilateral subdural tap did not yield fluid. Electroencephalography revealed no organic pattern and was interpreted as indicating a severe depression of cerebral function.

On the eighth day a neurologic examination did not show localizing neurologic signs except for decerebrate rigidity. It was assumed that there was a diffuse involvement of the brain, which was most probably in the nature of an anaphylactic reaction. Repeated subdural taps did not reveal free fluid; the cerebrospinal fluid was normal. On the twelfth hospital day signs of increased intracranial pressure appeared; the disk margins were found to be blurred, and roentgen examination of the skull revealed separation of the cranial sutures. Magnesium sulfate was given intramuscularly without apparent effect. At this time the electroencephalogram disclosed an almost entirely flat record, indicating almost complete suppression of cerebral function. On the seventh hospital day a ventricular tap was performed; 35 cc. of clear cerebrospinal fluid was removed; the communication between the ventricles and the lumbar intrathecal space was free. On the twenty-fifth day the child's temperature began to rise; it remained at a high level until his death, which occurred on the thirtieth hospital day. The patient remained comatose throughout his stay in the hospital. Four days before death an intradermal test was performed. The injection of vaccine elicited no reaction.

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[5] Toomey, J. A.: Reactions to Pertussis Vaccine, J. A. M. A. 139: 448 (June 4) 1949.

Necropsy Observations.—General: These were summarized as: cardiac hypertrophy; pulmonary edema and atelectasis, and focal necrosis of the liver.

The Brain: The brain was extremely soft, and during examination (even after fixation) became so distorted that it was difficult to make out surface markings on the cerebral hemispheres. The cerebellum and the brain stem retained a fairly normal consistency, and their surface markings remained intact.

Microscopic Observations: The cerebral cortex was entirely devoid of its normal architecture; no cortical lamellation could be recognized. Practically no nerve cell had retained its normal structure: the nucleus had lost its characteristic appearance, the tigroid substance was no longer present and the external configuration of the cell assumed a rounded outline of the abundant but poorly staining cytoplasm. Most striking was the widespread and copious accumulation of macrophages, which when stained with scarlet red exhibited large collections of fat granules. These cells, which served as evidence of a disintegrating, degenerative process, were found in the cortex as well as in the subcortex. They were less numerous in the cerebellum and brain stem. Fat particles were encountered also in the spinal cord and the spinal roots, in Marchi (osmic acid) preparations.

Significant was the total absence of vascular changes. Perivascular lymphocytic infiltrations were not seen anywhere, and necrotic changes in vessels or hemorrhages were not encountered.

The clinical manifestations in this case, severe from the onset, progressive and leading ultimately to death, are in full accord with the postmortem observations, pointing to a widespread, almost massive disintegration of the brain, affecting particularly the forebrain.

The absence of inflammatory alterations or necrotic changes in blood vessels, and the exclusively degenerative character of the anatomic changes in the cerebrospinal system, justifies the conclusion that in this instance the disease process was one that can be grouped with the primary degenerative encephalomyelopathies —hence, not an encephalitis in the usually accepted sense of the term.

COMMENT

From the foregoing it is obvious that the nervous system of the affected children reacted directly to the introduced foreign body, in these instances to the pertussis vaccine. The reaction, which was almost always alarming in the early phase, was reversible in 1 of our 2 cases but grave and fatal in the other.

In no instance was there an untoward reaction in other children who received injections of material with the same lot number of the pertussis antigen or the fluid vaccine.

The cause of this grave reaction is still undetermined, and several etiologic factors[6] are being considered: (1) a constitutional reaction inherent in the affected child; (2) an intravenous spread of the injected vaccine; (3) the action of pyrogens liberated by bacterial organisms; (4) damage to cerebral vessels caused by a toxin probably present in pertussis vaccine, and, finally, (5) an antigen-antibody response to previous specific desensitization.

It is apparent that no final conclusions can as yet be drawn from the observations on our own material, although the neuropathologic alterations, primary degenerative in nature, seem to point in the direction of an antigen-antibody reaction as a causative factor.

SUMMARY

Two cases are described in which manifestations of cerebral involvement followed inoculation with pertussis vaccine. In 1 instance the reaction was at least partly reversible, but in the other there was a fatal termination. In the latter instance postmortem investigation revealed anatomic changes of a diffuse, primary, degenerative nature in the brain. These histologic features, noninflammatory in character, suggest the probability that an allergic form of encephalopathy was caused by an antigen-antibody reaction.

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[6] Miller, J. J., Jr.: Experimental Observations in Antigenic Potency of H. Pertussis Extracts, J. Immunol. **26**: *247, 1934.* Evans, D. G., and Maitland, H. B.: Preparation of Toxin of H. Pertussis: Its Properties and Relation to Immunity, J. Path. & Bact. **45**: 715, 1937. Wood, M. L.: Filtrable Toxic Substances in Broth Cultures of H. Pertussis, J. Immunol. **39**: 25, 1940.

RESULTS OF CLASSIC OPERATIONS FOR DUODENAL ULCER

Five to Ten Year Follow-Up in Five Hundred and Thirty-Two Cases

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During the decade preceding the revival by Dragstedt and his co-workers of interest in section of the vagus nerves, there was not widespread unanimity regarding the indications for the operative treatment of patients suffering from a duodenal ulcer. Various principles had been established, and there had not been general agreement as to the type of operative procedure that was indicated in each type of case, although diverse sentiment did crystallize into a rather consistent pattern prior to the clinical reapplication of vagotomy. Within the three years previous to this report, conflicting reports pertaining to results of vagotomy have appeared in the medical literature and have incited unbounded enthusiasm for the procedure on the part of some persons and complete abandonment of the procedure by others. Between these extremes, a large number of physicians and surgeons have reached no definite conclusions but are maintaining an open mind until sufficient time has elapsed to permit a reasonable appraisal of the value of vagotomy alone and in conjunction with other associated surgical procedures such as pyloroplasty, gastroenterostomy and gastric resection. Sufficient time will have elapsed within the near future to accomplish this appraisal, and it is for this reason that it would seem appropriate at this time for many surgeons to review and place on record the results of classic operations for duodenal ulcer in order that there may be afforded the opportunity for all to compare these results with impartiality.

It was with this purpose in mind that an attempt was made to determine as accurately as possible the results

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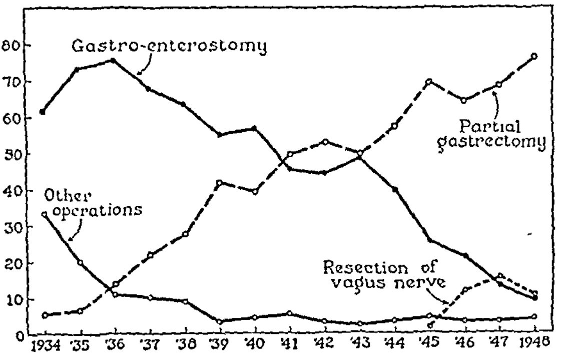
Read before the Section on Surgery, General and Abdominal, at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

of operations for this condition in a series of 532 consecutive cases in which operation for duodenal ulcer was performed by one of us (H. K. G.) in the five year period from 1937 to 1941, inclusive. Satisfactory information was obtained in 388 of these cases. The selection of a group of patients on whom the operation had been performed by one surgeon was made deliberately, as it was felt that a more personal follow-up would result in greater accuracy and that the indications for a particular surgical procedure and the technical details of the operation would have been reasonably consistent. No patient had undergone the operation less than five years or longer than ten years prior to the study. If patients succumbed during the period between the operation and the date of this study from the effects of the original lesion or its complications, the results were classified as unsatisfactory. Patients who succumbed less than five years after the operation from unrelated causes were excluded from the study.

An evaluation of the condition of each patient's general health was attempted, and a definite statement was elicited as to whether the symptoms of the ulcer were completely relieved, partly relieved or not relieved by operation. The inquiry was directed toward obtaining data on particular postoperative symptoms, such as pain, nausea, vomiting, hemorrhage and gain or loss of weight. Whether or not the patient had been able to return to his or her usual occupation was determined, and the period of enforced layoff was computed. When further medical or surgical treatment for the ulcer or for complications arising after the operation had been necessary, an attempt was made to obtain the essential details of this treatment. The correlation of these subjective findings with such factors as the sex and age of the patient, the clinical history, the pathologic data at the time of operation and the type of operative procedure carried out was made in an effort to ascertain the set of circumstances that apparently offered the best chance of a satisfactory result and by the same token to determine, if possible, the underlying causes of an unsatisfactory result.



Operations for duodenal ulcer performed at the Mayo Clinic in the fifteen year period from 1934 through 1948.

In attempting to evaluate the efficacy of the surgical treatment of duodenal ulcer in a particular series of patients it would seem reasonable to review the indications for operative intervention and for certain operative procedures that obtained at the time the operations were performed. Only by so doing is it possible to interpret follow-up results and to profit by apparently erroneous practices. The series under discussion presented an interesting and extremely difficult problem, for both the accepted criteria for surgical intervention for duodenal ulcer and the adaptation of selected surgical procedures to its therapy had begun to undergo rapid change only a few years prior to 1937. The experience at the Mayo Clinic apparently has been representative of all but a relatively few groups and may be illustrated numerically. Whereas, in 1931, 26 per cent of the patients for whom a diagnosis of duodenal ulcer was made submitted to surgical treatment, only 13 per cent were operated on in 1945 and approximately the same percentage in subsequent years. Gastroenterostomy was performed on 61.6 per cent, partial gastrectomy was done on 5.2 per cent and a plastic operation at the outlet of the stomach was performed on 33.2 per cent of patients in 1934. Indications for selected operative procedures changed rapidly and consistently during the next fifteen years, so that the figures for 1948 showed that partial gastrectomy was performed on 76.2 per cent of patients, gastroenterostomy on 9.3 per cent and pyloroplasty and other miscellaneous procedures on 4.0 per cent. Vagotomy was utilized alone or in conjunction with one of the other three procedures for 10.5 per cent of all patients who underwent operation in 1948. The accompanying graph indicates the changes in the fifteen year period. To attempt to explain the reasons for such a drastic alteration in the management of these patients is beyond the scope of this communication. Suffice it to say that pronounced improvement by clinicians in the conservative treatment of patients with duodenal ulcer reduced the number for whom surgical treatment was the only possibility and thus automatically presented the surgeon with a complicated problem in practically every case. A widespread impression had been held that any obstruction at the outlet of the stomach was sufficient evidence to warrant performing gastroenterostomy, irrespective of the age of the patient and the degree of activity in the ulcer. The development of ulceration near the gastroenteric stoma in a prohibitively high percentage of cases was then recognized, and a trend away from gastroenterostomy toward a more radical form of therapy became vividly apparent. The graph indicates that it was not until 1941 that the number of partial gastrectomies equaled the number of gastroenterostomies and that, for the last several years, the ratio of these two procedures has remained rather constant, at approximately 3 : 1. Table 1 includes data on all patients in the series.

The most conservative operation—that is, pyloroplasty—was reserved for the youngest group of patients, and in most instances the procedure was carried out for a minimal lesion that could be mobilized readily. Resection was done for a group of patients for the most part in the late thirties, whereas gastroenterostomy was utilized for a group of patients whose average age was greater by approximately fourteen years than that of the previously mentioned groups. The few Devine exclusion operations were done only as a matter of expediency for the older patients who had experienced episodes of massive hemorrhage and for whom a more radical procedure would have imposed a prohibitive risk. The ratio of men to women was 87 : 13.

An attempt to evaluate the condition of the patients' general health at the time of the operation did not reveal any remarkable differences in the two major groups. The average number of units of free hydrochloric acid before operation in the fasting contents of the stomach was 55 for the patients who underwent resection and

49 for the patients for whom gastroenterostomy was performed. The preoperative average quantity of hemoglobin per hundred cubic centimeters of blood was remarkably constant at 13.5 (plus or minus) Gm. in the two significant groups.

Data on the deaths in the series are given in table 2. Consideration of the causes of death in the two groups of patients for whom resection was done disclosed no significant factor that would suggest that one procedure offered any greater degree of safety than the other. The two sets of data represent patients with different pathologic manifestations of duodenal ulcer and cannot be compared statistically. It is our opinion, however, that exclusion of a deeply situated ulcer of the posterior wall is a safer procedure than attempting to remove it, thus jeopardizing the structures in the region of the ampulla of Vater which may be drawn up into close proximity to the ulcerated area. Two duodenal fistulas developed in the former group, but both healed spontaneously in a short time. Two deaths from peritonitis (the suture lines were intact) and 4 from pneumonia conceivably might have been avoided had the modern chemotherapeutic agents been available at the time these operations were performed. Three deaths from uremia, 2 from postoperative hemorrhage and 1 each from coronary occlusion, pulmonary embolism and ulceration of the colon were recorded.

TABLE 1.—*Data on All Patients Operated on for Duodenal Ulcer (1937-1941)*

		Type of Operation						
			Resection, Excluding Ulcer					
	Sex	Resection, Including Ulcer (Posterior Polya)	Posterior Polya*	Anterior Polya	Posterior Gastroenterostomy	Pyloroplasty	Devine Exclusion	Totals
Number of patients	M	42	155	7	243	10	4	461
	F	9	10	0	45	7	0	71
Average age at time of operation, years	M	40.1	38.6	37.7	52.4	35.9	61	...
	F	33.8	40.1	..	50.0	37.0	..	...

* Includes 1 Hofmeister-Polya type operation.

Several striking figures are apparent in table 3. That so high a percentage of patients in all categories were symptom-free following the operation is gratifying, but the high percentage of those whose condition became worse is most distressing. In the group in which the ulcer was included with the resected portion of the stomach, no further surgical procedure was required. In 6 patients (3.5 per cent) of the group in which the ulcer was excluded, lesions developed for which additional surgical treatment was indicated. At the time of the second operation, there were 4 diagnoses of gastrojejunal ulcer (1 with colonic fistula) and 2 of gastrojejunitis. Seventeen patients (5.9 per cent) in the group in which the original operation was a gastroenterostomy underwent a secondary operation for gastrojejunal ulcer, and 6 patients (2.1 per cent), for a malfunctioning gastroenteric stoma. Further surgical treatment was necessary for 24 per cent of the group who underwent pyloroplasty.

It would be assumed that the majority of the patients in whom gastrojejunal ulcers developed after gastroenterostomy were young and showed gross evidence of an active duodenal ulcer, and such was the case. Three patients were in the third decade (aged 24, 29 and 29), 1 patient was 38, 6 patients were in the fifth decade (aged 40, 42, 46, 46, 48 and 49), 5 patients were in the sixth decade (aged 52, 53, 53, 56 and 58), 1 patient was 61 and 1 was 67. Only 4 patients in the entire group in which a stomal ulcer developed were over 55.

TABLE 2.—*Hospital Mortality Rates for Patients Operated on for Duodenal Ulcer**

	Type of Operation						
		Resection, Excluding Ulcer					
Deaths	Resection, Including Ulcer (Posterior Polya)	Posterior Polya	Anterior Polya	Posterior Gastroenterostomy	Pyloroplasty	Devine Exclusion	Totals
Number......	3	8	0	3	0	0	14
Per Cent.....	5.9	4.8	..	1.0	..	..	2.6

* Includes emergency operations for active massive hemorrhage.

In 5 cases, symptoms suggesting a jejunal ulcer developed within a year after operation; in 4, within two years; in 2, within three years; in 4, within 4 years; in 1, within five years, and in 1, not until seven years after gastroenterostomy had been performed. The shortest time interval between operation and the development of the symptoms of a stomal ulcer was two weeks, in the case of a man aged 42, and the longest interval was seven years, in that of a man of 48. Although there were only 45 cases of women for whom gastroenterostomy was performed, it is significant that in none did a stomal ulcer develop, so far as could be determined.

The ages of the men in the cases in which a stomal ulcer or gastrojejunitis requiring operative intervention developed after partial gastrectomy ranged from 30 to 52. Three were 30, 31 and 39, respectively, 1 was 40 and 1 42, and 1 was 52 when the first operation was performed. In 4 cases, symptoms suggestive of stomal ulceration developed within the first year after the gastric resection was done; in 1, in the second year, and in 1, approximately five years after the operation.

TABLE 3.—*Results of Operations for Duodenal Ulcer*

	Type of Operation					
		Resection, Excluding Ulcer				
Results of Operation	Resection, Including Ulcer (Posterior Polya)	Posterior Polya	Anterior Polya	Posterior Gastroenterostomy	Pyloroplasty	Devine Exclusion
Complete relief...	83*	77	85	72	30	75
Partial relief......	13	9	15	5	47	25
No relief..........	0	2	0	1	0	0
Condition worse †	4	12	0	22	23	0

* All numbers indicate the percentage of patients in each category of results for each type of operation.

† Includes, in addition, the percentage of patients who died and those for whom subsequent operations were required.

COMMENT

As was suggested in the introductory comments to this communication, this review of a series of 532 consecutive cases in which the patients underwent operations for duodenal ulcer in the five year period from 1937 to 1941, inclusive, was undertaken in order to place on record the results of the classic operations for duodenal ulcer five to ten years after operation and, thus, to afford an additional basis for comparison with a similar series in which the patients underwent vagotomy, alone or in conjunction with one of the classic operations, after a similar period has elapsed.

A second purpose was to attempt to ascertain the set of circumstances that apparently offered the best chance of a satisfactory result, and by the same token to determine, if possible, the underlying causes of an unsatisfactory result. On the basis of our impressions, it would seem appropriate to say that uncomplicated duodenal ulcer should be considered a "medical disease." For the most part, surgical treatment should be reserved for its complications. Those patients who have an uncomplicated duodenal ulcer should undergo an adequate trial of rigid conservative treatment before the possibility of surgical intervention is even considered. That some of these patients will have to undergo operation sooner or later is admitted, but evidence has been made available suggesting that approximately 80 per cent of patients who have the disease can be managed satisfactorily with conservative treatment. In the light of our present knowledge, therefore, it would appear that many of the patients in this series could have been treated satisfactorily without resort to surgical intervention if our modern methods of treatment had been available. The complications of duodenal ulcer which would seem to require surgical intervention are perforation (acute, subacute or chronic), cicatricial pyloric obstruction, hemorrhage (particularly in patients beyond the age of 55), intractability on a well formulated medical regimen or any combination of these factors.

Our impressions from this study suggest that if surgical intervention cannot be avoided and if the classic procedures are to be employed, gastroenterostomy is indicated for patients over 55 who have a long-standing ulcer with relatively low gastric acidity and with symptoms due primarily to cicatricial pyloric obstruction. The low operative risk imposed makes this operation particularly useful for this group of older patients, in which concurrent disease increases the risk of any surgical procedure. Partial gastrectomy should be reserved for the most part for the patients under 55 who have relatively high gastric acidity and for whom all clinical evidence suggests an active ulcer. Although the age of the patient is an extremely important consideration, we feel that the arbitrary limit we have set is flexible and that sound surgical judgment, as exercised in individual cases, should not be replaced by dogmatic rules of conduct in the surgical treatment of the patient with duodenal ulcer.

ABSTRACT OF DISCUSSION

Dr. I. Ridgeway Trimble, Baltimore: The great value of this paper stems from three sources: (1) its timeliness; (2) the postoperative period of five years or more which has been permitted to elapse before the report was initiated, a most refreshing change in these days when a patient's progress is in the press almost before his abdomen is painted with iodine solution, and (3) the study and interpretation of the cases under the guidance of a man with the surgical ability and the intellectual honesty of Dr. Howard Gray. In the enthusiasm which greeted Dragstedt's reintroduction of vagus resection, such caution as is shown in this paper was in many instances not exercised and the nerve operation was widely recommended for routine performance. Only after a series of disappointments did it become unequivocally clear that the interruption of the vagi was, in itself, unsatisfactory. Currently, even the most ardent proponents of vagus resection supplement it with a gastric drainage procedure, most often gastroenterostomy. However, there is ample evidence that the effects of vagus resection are transient and therefore incapable of protecting a gastroenteric stoma against the likelihood of ulceration, particularly in the young person with copious amounts of acid-pepsin juice. Perhaps the reactivation of gastric functions is a blessing in disguise, for it has occurred to me and to my associate, Dr. David Lynn, that the persistent inhibition of secretion might conceivably predispose the stomach to malignant transformation. This remote possibility was suggested by the frequency with which gastric carcinoma is associated with hypochlorhydria or achlorhydria and by the occasional appearance of gastric ulceration subsequent to vagus resection for duodenal ulcer. As far as I know, this is the first time that this possible complication of vagotomy has been mentioned. It would seem highly irrational to employ vagus resection in any but the occasional instance. I should like to ask Dr. Gray whether the gastric resection he performs at present is more extensive than was the case formerly; if so, what additional benefit has this provided? It would be important to know his criteria for an adequate resection and what effort is made to exenterate the antral mucosa when an exclusion modification is deemed necessary.

Dr. Harold D. Harvey, New York: It is a privilege to hear the results of the labors of a surgeon who has had such extensive experience in gastroduodenal surgery as has Dr. Gray. This report will be of great value to surgeons and internists alike, who want an honest, tangible basis for their treatment for peptic ulcer. Certainly, in order to be able to offer treatment to patients in the future, the physician must know the results of his efforts in the past. As Dr. Gray intimates, his report has to do not with 532 units that were all treated alike but with 532 human beings who were subjected to a changing mode of therapy. It is only by comparing reports from several large clinics and finding facts that are common to all of them that one can draw useful conclusions. Our own experience at the Presbyterian Hospital in New York coincides with that of Drs. Gray and Williams in two respects, the high proportion of good results that follow resection for peptic ulcer and the relative safety of gastric surgery at the present time. In regard to late results, we also found that approximately 85 per cent of the patients after resection for peptic ulcer had excellent effects, about 5 per cent had ill effects and the remaining 10 per cent had results that were satisfactory or not, depending on the standards by which they are judged. Our further study should be concentrated on the 5 per cent of patients who fared poorly. What distinguishes them from the others? Have they any factors in common that we can determine? In Dr. Gray's cases we note that about three fourths of the surgical failures involved posterior Polya resections, excluding the ulcer; yet we had come to the conclusion from our own records that posterior Polya resections resulted as well as anterior, and that leaving the ulcer in did not prejudice the patient's outlook, provided the antral and pyloric mucosa was removed. Was this mucosa resected in all of Dr. Gray's cases? Our own postoperative mortality rate for major operations on the stomach has fallen sharply since 1941. For over twelve years now, we have shown a 1 per cent mortality rate after elective resections for peptic ulcer among patients under 50 years of age, but we used to hesitate to perform the operation on the older patients. For the past three years even the older persons have been surviving, and that is important because about 40 per cent of our resections are performed on those over 50 years of age. As a result, in 1948 among 166 operations for peptic ulcer and its complications there was only 1 gastroenterostomy; we reserved vagotomy for marginal ulcers which followed resection and for a few other special cases, and we performed 129 resections, including 15 as emergency measures for control of acute massive hemorrhage. Among all these patients, 1 died.

Dr. Otto De Muth, Vancouver, B. C.: Two and one-half years ago my sister, Dr. Lillian De Muth of New York, and I wrote an article strongly condemning vagotomy as a cure-all for peptic ulcers. We praised Dr. Dragstedt, a man whom we respect and who has been an inspiration. However, we believe that he endorsed too soon a procedure that had not yet stood the test of time. The morbidity and mortality that has gone across this country and Canada and indeed around the world because of the hasty adoption of the vagotomy procedure has undone much of the good that the measure is capable of in properly selected cases in the future. We have a conscience in surgical practice, and we as professional persons must use it. Many surgeons are not qualified to do this type of work. Scratching around the fundus of the stomach is not doing a complete vagotomy. This is all to the good. The patient will be the better in the long run for the incomplete vagotomy. I will try to depict the manner in which we section the sphincter of Oddi. The instrument we use is now available to the members of the medical profession. We open the common bile duct and pass the instrument down; the knife comes out of the olive recess of the bulb and sections the sphincter. In the barrel of the instrument is the spring that keeps the knife in the recess of the bulb. (Bulbs are made in 5, 7 or 12 mm. sizes.) We take the instrument out and insert a catheter down the common bile duct; then with an aseptic syringe we run water through the catheter.

Dr. Howard K. Gray, Rochester: I had the pleasure several years ago of visiting Dr. De Muth when he was interested in the use of this instrument in the treatment of biliary dyskinesia, and I am most interested in the secondary use that he presented today. A great deal of discussion has arisen as to whether one is justified in excluding the ulcer when one performs a partial gastrectomy for duodenal ulcer. The series that I have presented to you has been divided into cases in which the ulcer has been excluded and those in which the ulcer has been removed in the course of resection. Perhaps I am an enthusiast in advocating exclusion of the ulcer when it is so deeply situated that any attempt to remove it may jeopardize vital structures in the region of the ampulla of Vater. In the occasional case in which transection of the stomach has been made proximal to the pylorus great care is taken to remove all the mucous membrane in the remaining portion of the pyloric antrum. My associates and I have considered that the objections to excluding the ulcer are more than compensated for by the safety which is attained. Although the results of this study show that there has been slightly higher incidence of stomal ulcers in those patients in whom the original duodenal ulcer has been excluded, we believe that this is not a just criticism of the procedure: the nature of the original ulcer has been different in the two series of cases, and the group in which the ulcer has been excluded probably represents persons who have a more active type of ulcer diathesis and who are therefore more prone to the development of a stomal ulcer. We had hoped to determine from this study the reasons for the unsatisfactory results following gastroenterostomy. In our series gastroenterostomies were frequent and were being performed in young patients. One would suspect that stomal ulcers would occur in a higher percentage in this group of young persons than in the older patients. Actually this was so, and yet there were some patients who were in their late fifties or early sixties at the time of the operation in whom stomal ulcers developed after gastroenterostomy had been performed. From the practical point of view; therefore, it would seem that the age and nature of the ulcer itself, rather than the age of the patient, was the important factor which should influence the surgeon in choosing the type of operative procedure to be performed. If there is evidence of an active ulcer, regardless of the age of the patient and regardless of whether obstruction is present, it would seem to be more satisfactory to perform a resection if other factors which influence operative risk have been considered. In our experience gastroenterostomy should be reserved for the older patients who have a chronic sclerosing, stenotic lesion with definite mechanical obstruction.

THE CONSERVATIVE TREATMENT OF PREMATURE SEPARATION OF THE NORMALLY IMPLANTED PLACENTA

A Study of 293 Cases

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Premature separation of the placenta has been treated conservatively for the past twenty years by the Department of Obstetrics and Gynecology of Emory University at Grady Memorial Hospital. From October 1928 through September 1948 in 47,066 deliveries we diagnosed premature separation in 293 cases, an incidence of 1:161. The management of these cases has not been modified by the severity of the condition in the mother or by the viability of the fetus. For this reason it is felt that the results of our study should afford a good basis for the evaluation of the conservative plan of therapy.

The management of these patients was under the supervision of Dr. James R. McCord until he retired in 1945. The conservative treatment used by our department was outlined by Bartholomew in 1929.[1] This plan has been based on spontaneous vaginal delivery. Labor has been induced or stimulated by the artificial rupture of the membranes as soon as the diagnosis was established. Whole blood transfusions and other fluids have been administered as indicated for the individual case. Operative procedures were undertaken only for obstetric indications other than the premature separation of the placenta.

The diagnosis of premature separation was confirmed in these 293 patients by the examination of the placenta after delivery. The cases have been classified as mild, moderate or severe according to the following criteria: mild cases were those in which the signs of premature separation (hemorrhage, tetany of the uterus and fetal death) were not definite enough to permit the diagnosis before delivery; moderate cases were those in which two or more of the typical signs were present, and the diagnosis of premature separation of the placenta could be made antepartum; and severe cases were those in which the diagnosis of premature separation could be made antepartum and, in addition, eclampsia, severe hypertension (a blood pressure of 170 systolic and 110 diastolic or above) or definite shock was also present.

ANALYSIS OF CASES

Complete clinical information is available for 224 cases. The detailed study of the factors influencing the course of premature separation is based on this group. The entire series of 293 patients is used for the discussion of the maternal mortality.

The ages of these patients ranged from 13 to 44 years. Of the 224 patients, 99 were 13 to 24 years of age, 90 from 25 to 34 years and 35 older than 34 years. Forty-nine patients were nulliparas, and 175 were multiparas. Antepartum care was given 145 of the patients by our clinic, but 79 women were not followed

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[1] Bartholomew, R. A.: Premature Separation of the Normally Implanted Placenta, Am. J. Obst. & Gynec. **18**: 818, 1929.

by us in this pregnancy until the premature separation of the placenta occurred. The fetus was immature (weighing less than 1,500 Gm.) in 33 pregnancies, premature in 99 and at term in 92. Three patients had twin pregnancies.

Using the method of classification that we have outlined, 58 cases were designated as mild, 96 moderate and 70 severe. The severe cases were complicated by eclampsia in 7 patients, by severe hypertension in 49 and by shock in 33. Although the mild cases were not diagnosed until the placenta was inspected, most of them had antepartum observations suggestive of premature separation. Antepartum bleeding was present in 34 of the 58 mild cases, although the amount was slight in 25 of this number. Increased uterine tone was present in 7 other mild cases, and fetal death occurred antepartum in 6 additional cases. In only 11 of the 224 cases were there no clinical observations before delivery to indicate the possibility of premature separation.

Complicating Factors.—Hemorrhage, toxemia and shock are the serious conditions associated with premature separation. A total blood loss of 500 cc. or more has been considered a significant complicating factor. The amounts of blood lost have been determined by estimation and should not be considered as exact volumes. Table 1 gives the incidence and amounts of hemorrhage before delivery, at and after delivery, and the total blood loss. The relationship of hemorrhage to shock, to hypertension and to the severity of the case is indicated. Hemorrhage was not seen until the third stage of labor in 37 cases. The antepartum blood loss was less than 500 cc. in 152 cases, but it was 500 cc. or more in 35 others. The total blood loss before, during and after delivery was less than 500 cc. for 121 patients, yet 25 of these were among the 70 severe cases of premature separation.

TABLE 1.—*Hemorrhage in Premature Separation of the Placenta*

Amount of Hemorrhage	Total Number of Cases	Stage of Gestation			Shock		Hypertension	Classification		
		Immature	Premature	Term	Before Delivery	At and After Delivery		Mild	Moderate	Severe
Before delivery										
None	37	3	18	16	1	..	23	19	8	10
Less than 500 cc.	152	26	69	57	8	..	81	39	76	37
500 cc. or over	35	4	12	19	14	..	21	0	12	23
At and after delivery (3 patients died undelivered)										
Less than 500 cc.	134	24	52	58	..	1	72	51	51	32
500 to 1,000 cc.	61	7	33	21	..	4	33	7	32	22
1,000 cc. or over	26	2	14	10	..	5	20	0	13	13
Total blood loss										
Less than 500 cc.	121	23	47	51	4	1	60	51	45	25
500 to 1,000 cc.	52	4	29	19	2	1	27	7	31	14
1,000 cc. or over	51	6	23	22	17	8	38	0	20	31
Total	224	33	99	92	23	10	125	58	96	70

Hypertension was found in 125 patients, of whom 7 were eclamptic. The large number of women without antepartum supervision and the incomplete postpartum records of many cases make it impossible to differentiate preeclampsia from essential hypertension. A sustained blood pressure of 170 systolic and 110 diastolic or above was considered severe hypertension. On this basis 49 patients had severe hypertension and 69 mild. Hypertension seemed to have little relationship to mild and moderate degrees of hemorrhage.

Shock was recognized in 33 patients. In 19 patients shock was present at the time of admission, and in 4 patients it developed after admission but before delivery. In 10 women shock developed at or after delivery. It occurred at delivery in 6 cases and within five hours in 3 others. Shock developed in one patient twelve hours postpartum. Three women relapsed back into shock after delivery. Twenty-five of the cases of shock developed in patients who had had hypertension, and 5 of these women lost less than 500 cc. of blood. The total blood loss was 1,000 cc. or more in 51 women, but shock was found in only 25 of this number. Thirty-eight of the 51 patients had been hypertensive, and shock developed in 20 of these.

Management of Labor.—Only 16 patients were not in labor, as indicated by the condition of the cervix, when they were admitted. The cervix was dilated 1 to 2 cm. in 38 women at their admission and 3 cm. or more in 74 patients. The degree of cervical dilatation was not determined in 96 patients.

The membranes were ruptured artificially to induce or to stimulate labor in 111 cases. The latent period and length of labor after the rupture of the membranes totaled less than five hours in 77 patients, from five to twenty-four hours in 29 and over twenty-four hours in 5.

Low forceps were used in two deliveries; one breech extraction was done, and two podalic versions and breech extractions were performed (once for a prolapsed cord and once for a transverse presentation). A Porro cesarean section was performed on 3 patients. The indication for this in 1 instance was a leiomyoma obstructing delivery, and the premature separation was found at operation. The other two cesarean sections were performed in the early years of this study, the only indication being the premature separation of the placenta.

Fetal Mortality.—Fetal loss is summarized in table 2. Data on the 33 infants weighing less than 1,500 Gm. are not reviewed. The infant mortality of the 191 premature and term deliveries was 60.2 per cent. The fetal mortality of the severe cases of premature separation was 82.8 per cent, of the moderate cases 55.2 per cent and of the mild cases 27.7 per cent.

Maternal Mortality.—Data on the entire group of 293 patients are used for our study of maternal mortality. Fourteen mothers died, giving an uncorrected maternal mortality rate of 4.8 per cent. Two of the patients died before the infants had become viable, 1 at the twenty-third week of gestation (case 287) and 1 at the twenty-sixth week (case 290). For this reason all cases of premature separation of the placenta occurring in the last half of pregnancy are included in our review. The major factors involved in the maternal deaths are summarized in table 3.

We consider 5 fatalities as correctible in that the conservative method of treatment was not the causative factor. These 5 cases are summarized as follows:

Case 280 (1929).—The patient had eclampsia, and labor was induced in the home by a local physician. He used an unsterile intrauterine catheter for the induction. Pelvic peritonitis and parametritis developed, and the patient died of bilateral pyonephrosis seven weeks postpartum.

Case 281 (1932).—The patient contracted lobar pneumonia twelve days postpartum while waiting for sterilization. She died two days later.

Case 287 (1948).—*Shock and Anuria.*—The patient was admitted in shock, with anuria, and was delivered one hour later. Profuse hemorrhage occurred before and at delivery. Adequate blood replacement (5,000 cc.) was given, but the anuria persisted.

Case 288 (1937).—*Sepsis.*—The condition of the patient was not diagnosed as premature separation until the placenta was examined. Intrapartum infection had occurred in a twenty-five hour labor with an eleven hour second stage. Death was caused by sepsis on the eighth postpartum day.

Case 289 (1947).—*Severe Hypertension.*—The blood pressure of the patient was 220 systolic and 160 diastolic. Shock had not occurred, but acute pulmonary edema developed five hours postpartum, and the patient died one hour later.

Table 2.—*Fetal Results: 191 Infants in 188 Pregnancies (Including Three Pairs of Twins)*

Condition of Fetus	Total	Maternal Factors: Hemorrhage: Less than 500 Cc.	Maternal Factors: Hemorrhage: 500 Cc. and Over	Shock	Hypertension	Classification: Mild	Classification: Moderate	Classification: Severe
Premature								
Dead on admission	54	18	36	9	38	3	24	27
Died after admission	10	4	6	0	8	3	6	1
Born alive	35	32	3	3	13	14	14	7
Total	99	54	45	12	59	20	44	35
Term								
Dead on admission	40	16	24	12	23	3	19	18
Died after admission	11	7	4	2	5	4	4	3
Born alive	41	33	8	1	19	20	18	3
Total	92	56	36	15	47	27	41	24

Table 3.—*Maternal Deaths*

Case	Classification: Mild	Classification: Moderate	Classification: Severe	Severe Hypertension *	Shock	Amount Blood Loss (Cc.)	Time of Death †	Autopsy
280	....	....	Yes	Ecl.	No	500	7 wk. P. P.	Yes
281	....	....	Yes	220/130	No	300	14 days P. P.	No
282	....	....	Yes	....	On admission	2,000	1 hr. after admission	Yes
283	....	....	Yes	....	On admission	2,000	7 hr. after admission	Yes
284	....	....	Yes	....	On admission	2,000	4 hr. after admission	Yes
285	....	....	Yes	Ecl.	At delivery	600	6 hr. P. P.	Yes
286	....	....	Yes	Ecl.	On admission	1,200	11 hr. P. P.	Yes
287	....	....	Yes	200/120	On admission	2,300	3 days P. P.	No
288	Yes	....	....	No	No	500	8 days P. P.	No
289	....	....	Yes	220/160	No	500	6 hr. P. P.	Yes
290	....	Yes	....	No	No	Slight	6 days P. P.	Yes
291	....	....	Yes	No	In labor	1,400	3 days P. P.	Yes
292	....	....	Yes	170/120	4 hr. P. P.	1,400	22 hr. P. P.	No
293	....	....	Yes	170/110	At delivery	1,700	7 hr. P. P.	Yes

* Ecl. denotes eclampsia. † P. P. denotes postpartum.

Case 282 (1943).—The patient was admitted four hours after the delivery of the first twin. Severe hemorrhage had occurred in the home, and the patient was in profound shock at the time of admission. She did not respond to therapy for shock and died one hour later, with the second twin undelivered.

Cases 283 (1937) and 284 (1942).—The condition of these patients was not diagnosed as premature separation of the placenta until their postmortem examination. Because of poor clinical judgment, treatment was not given until less than thirty minutes before death. The blood loss of these 2 patients was not recognized as having been so severe (2,000 cc. each) until the cases were reviewed after they had died.

Serious complications were present at the admission, on diagnosis of condition, of 5 other patients who died.

Cases 285 (1934) and 286 (1934).—*Eclampsia.*—The patients were in coma at the time of admission and remained comatose. Both patients manifested shock during delivery and failed to respond to treatment.

The postpartum course of 2 additional patients was complicated by conditions terminating in death.

Case 290 (1945).—The patient had a total blood loss of less than 500 cc., and shock did not occur. Pulmonary edema developed forty-eight hours postpartum and progressed in spite of treatment until the patient's death six days after delivery.

Case 291 (1937).—The patient manifested shock at the time of delivery. The total blood loss was 1,400 cc. Sepsis developed postpartum, ending in coma and death.

No specific complications in addition to the premature separation were found to account for 2 of the deaths.

Cases 292 (1934) and 293 (1941).—The patients had severe hypertension and profuse hemorrhage before and at delivery. The bleeding persisted after delivery in case 293. Both patients manifested shock postpartum and died.

COMMENT

The premature and term fetal mortality of this review was 60.2 per cent. Ninety-seven infants were living when the mothers were admitted and 76 of these, or 78.4 per cent, were delivered alive. Fourteen infants of the mothers classified as severe cases of premature separation were living at admission, and 10 were delivered alive. Only 4 babies were born alive of the 33 patients who manifested shock.

An impressive feature of the conservative treatment of premature separation of the placenta is the rapidity with which delivery is completed after the onset of symptoms. Only 16 patients were found to have no dilatation of the cervix at the time of their admission. Fourteen of these 16 pregnancies were more than four weeks from term, and 11 of the cases were classified as of severe premature separation. The results obtained with these women should give an evaluation of the conservative method of treatment under extremely difficult circumstances. These cases are summarized in table 4. Delivery occurred within less than seven hours after rupture of the membranes in 9 cases and within eighteen hours in all but 2 of these 16 patients. The 1 maternal death, case 280, is described in the preceding section on maternal mortality.

Hypertension, hemorrhage and shock are the major complications associated with premature separation of the placenta. Excessive loss of blood in hypertensive patients is dangerous. Of the 38 hypertensive patients who lost 1,000 cc. or more of blood, shock developed in 50 per cent and death occurred in 10 per cent.

TABLE 4.—*Patients Not in Labor on Admission*

			Stage of Gestation			Latent Period and Length of Labor			Infant Results		
Classification	Total	Nullipara	Immature	Premature	Term	0 to 6 Hours	7 to 18 Hours	Over 18 Hours	Dead on Admission	Died After Admission	Born Alive
Mild...........	2	1	0	2	0	1	1	0	0	1	1
Moderate......	3	0	0	3	0	1	1	1	2	1	0
Severe.........	11	3	3	6	2	8	2	1	9	1	1

Fresh hemorrhage at the time of delivery was infrequent in this series. The amount of loss of blood at delivery was often described as excessive, but it was composed almost entirely of old blood clots. Shock developed after delivery in only 4 cases, and persistent postpartum bleeding occurred in only 2 patients. In one of these the bleeding was controlled by a uterine pack; the other case has been summarized in the preceding section among the maternal mortalities (case 293).

The uterus was inspected visually in our study in only 13 cases (3 cesarean sections and 10 autopsies). A proved case of uteroplacental apoplexy (Couvelaire uterus) has not been seen on our service in the last thirty years. The hemorrhagic infiltration of the myometrium that may have occurred among our patients has not been severe enough to impair uterine contractility or to permit persistent postpartum bleeding.

The incidence of shock as diagnosed in this review was relatively low, although significant hemorrhage (500 cc. or over) occurred in 103 cases. Shock seemed to occur frequently among hypertensive patients who lost considerable blood. The predisposition of these hypertensive patients to manifest shock indicates that blood pressure readings alone cannot be relied on to determine shock in cases of premature separation of the placenta. So-called normal blood pressure readings may be severe shock levels for previously hypertensive patients. Among the 33 patients who had clinical shock (as indicated by pulse, temperature and circulatory collapse) 9 had blood pressures of 100 systolic and 70 diastolic or above at the time of shock. After treatment for shock these pressures rose to 150 systolic and 100 diastolic or higher.

Nine of the patients who died had had shock, and 5 of these died in shock. The condition of 2 of the 5 women had not been diagnosed as premature separation (cases 283 and 284); 2 other women had an associated eclampsia. The fifth woman (case 293) had persistent postpartum bleeding and died seven hours after delivery. Severe hypertension had occurred in 8 women who died, and 3 of these had eclampsia. Only 2 maternal deaths (cases 288 and 290) were not preceded by severe hypertension or shock, or both.

The maternal mortalities have been evaluated concerning the extent to which the deaths should be attributed to the conservative treatment of premature separation of the placenta. Five deaths were caused by conditions not related to this plan of therapy. Five other women had serious conditions present at the time of their admission or before the diagnosis of their condition. These complications were eclampsia, profound shock and anuria, sepsis and extremely severe hypertension. Such conditions would jeopardize the success of any program of therapy. In the deaths of 4 patients the conservative plan of treatment may have been a significant factor. Pulmonary edema and postpartum sepsis were the immediate causes of death in 2 women, and the other 2 had severe hypertension and profuse hemorrhage.

SUMMARY

From October 1928 through September 1948, 293 cases of premature separation of the placenta have been diagnosed.

The treatment in these cases has been conservative, consisting of spontaneous vaginal delivery. Artificial rupture of the membranes to induce or stimulate labor and supportive measures of transfusions and intravenous fluids have been used.

The uncorrected maternal mortality rate was 4.8 per cent, or 14 deaths. Five of these deaths were not the result of the conservative method of treatment. Five more occurred in patients who had serious complications at the time of admission or before the diagnosis was established. The conservative treatment may have been a significant factor in 4 deaths, giving a corrected mortality rate of 1.4 per cent.

A detailed review has been made of the 224 pregnancies on which complete information is available. These are classified as 58 mild, 96 moderate and 70 severe cases of premature separation of the placenta.

Hemorrhage totaling 1,000 cc. of blood or more occurred in 51 patients. Loss of blood at the time of delivery was composed almost entirely of old blood clots. Persistent postpartum bleeding took place after only 2 deliveries. No proved case of uteroplacental apoplexy (Couvelaire uterus) was seen in this study.

Shock was diagnosed in 33 patients. It was associated with either hypertension or excessive blood loss, and 20 of the patients had both conditions.

Hypertension was present in 125 patients. It was classified as mild in 69 cases and severe in 49. Eclampsia occurred in 7 women, 3 of whom died.

Ninety-seven premature and term infants were living at the time the mothers were admitted, and 76 of the babies were delivered alive. Fourteen infants were living at the admission of the 70 patients whose condition was classified as severe, and 10 of these were born alive.

ABSTRACT OF DISCUSSION

DR. M. PIERCE RUCKER, Richmond, Va.: Drs. McCain and Poliakoff have given a good clinical description of premature separation of the placenta and have stressed the importance of hemorrhage, shock and hypertension in its prognosis. Its etiologic basis is still unknown. Of the 224 cases discussed, in 145 with full clinical data the mothers had antepartum care. The authors do not say whether such care had any influence on the incidence or on the severity of the disease. I was particularly impressed with what was said about uteroplacental apoplexy (Couvelaire uterus). There was no proved case of this in the present series, and 13 uteri, presumably the worst cases, came under observation either at operation or at autopsy. In the 293 cases, there were only 2 instances of uncontrollable bleeding, and neither showed uteroplacental apoplexy. My own experience, though less extensive, is similar. One often hears the argument that a uterus so broken down by intramuscular hemorrhage cannot contract and should be removed to prevent uncontrollable postpartum hemorrhage. From the large series compiled by the authors and from my own smaller series, one must conclude that the Couvelaire uterus is either extremely rare or else it can contract sufficiently to prevent serious postpartum hemorrhage, to say nothing of completing the first and second stages of labor. The authors' classification is to be commended, and I like the expression recognized cases. Only their treatment of patients with the severe type is open to any criticism. No one would advocate cesarean section for those with the mild or the moderate types, although 2 of the maternal deaths occurred in these two groups. One case was not recognized until the placenta was inspected; the patient died of pulmonary edema six days postpartum. Being an advocate of digitalis therapy in all types of toxemia, I would like to know whether this patient was given digitalis and, if so, how soon and how much. The case of death at seven weeks postpartum of sepsis caused by an unsterile uterine catheter that was used before the authors saw the patient cannot be charged to their treatment, nor can the case in which pneumonia developed on the twelfth day. The patient who died one hour after admission in shock and with an undelivered second twin presented a hopeless situation regardless of what type of treatment one advocated. The 2 patients who were not recognized as having ablatio placentae were admitted in shock. Evidently they did not respond to antishock treatment and were poor subjects for cesarean section. Cesarean sections surely should not have been performed on the 2 women with eclampsia. My only criticism would be that possibly these patients were not treated conservatively enough.

DR. C. O. MCCORMICK, Indianapolis: Undoubtedly it is startling to most physicians, who still harbor the opinion that forcible delivery holds an obvious position in the treatment of abruptio placentae, to hear it proclaimed that, regardless of the severity of the mother's condition or the viability of the fetus, and barring other obstetric indications, all cases can be managed best by conservative measures. Despite criticism of radical procedures that has appeared from time to time in outstanding reports, particularly those of Irving and Polak, and now substantiated by the study of Drs. McCain and Poliakoff, most physicians have been slow to adopt this doctrine of conservatism, particularly when handling cases of the severe type. I should like to place my approval on the classification of premature separation of the placenta employed by Drs. McCain and Poliakoff. Certainly a classification should be all-comprehensive and should include all cases not diagnosed until placental inspection after delivery. This increases the recorded incidence, which on this basis has been found to range from 1:150 to 1:200, that of the authors being 1:161. Naturally, uncontrolled abortions arising from this condition further increase the incidence. Hemorrhage, shock and hypertension, the familiar triad, were found to be the chief associated factors in the severe cases. In some instances shock occurred to a degree out of proportion to the loss of blood. An additional factor in such cases might be the sudden distention of the uterus. It was correctly pointed out that blood pressure readings alone are not dependable when studying shock in cases of abruptio placentae complicated by hypertension. With this in mind, that error should be avoided. Sixteen patients were not in labor when admitted or presumably when the diagnosis of abruptio placentae was made. One may infer that labor was induced in all these cases by rupturing the membranes. I wonder if a cervical pack or bag was used in any of them. The bag, because of its uncertainty and the time element, should have no place in the handling of severe cases. Perhaps the only indication for its use is in borderline instances, in which the differentiation between marginal placenta and abruptio placentae is not readily made. Also, I would like to know if the Spanish windlass was at all employed. It was noted that rapidity of labor was characteristic of this group of cases. Offhand one might think that nature, having suddenly realized her error, promptly attempts to save face. Unfortunately, in this instance she too frequently fails miserably. The authors report no proved case of uteroplacental apoplexy in their series. However, one might reasonably suspect that such a condition may have existed in the 2 cases of persistent postpartum bleeding, one of which was fatal, and also in the case of delayed postpartum shock. One cannot recognize a Couvelaire uterus except by direct inspection either at section or autopsy. Otherwise, there are no characteristic physical signs by which it may be identified.

DR. EDWARD G. WATERS, Jersey City, N. J.: Deaths from placental abruption must be considered preventable. Although complicating factors, notably toxemia and eclampsia, may induce a fatal issue, the major determinants of death from premature separation of the placenta are loss of blood and shock. For combating these, physicians have successful measures which must be at hand in every hospital. There is little dispute regarding the need for emptying the uterus to correct progressive and symptom-producing pathologic conditions. There is no real argument on the premise that the majority of cases are best managed by vaginal delivery, and although there is concern, there is no great dismay in viewing the prospects for the patient with an uncomplicated abruption, even though severe. It is when severe toxemia or eclampsia complicates the picture, especially before the thirty-fifth week of pregnancy, that the greatest danger is present for the mother, because medical science still has no specific therapy, no ready means of control, no gage by which one can accurately predict the degree or the outcome of increasing toxemia. Therefore, when the picture of abruption is complicated by fulminating toxemia the choice of therapy must be influenced, with the latter condition outranking in importance the more controllable ones of shock and loss of blood. It is with this in mind that I disagree with Drs. McCain and Poliakoff on the matter of selection of therapy. I also question the need or worth of correcting out any deaths in evaluating results. Any large series in any institution would undoubtedly contain a proportionate number of deaths not closely related to the plan of treatment and dependent on complicating factors or accidents, so that statistically correcting patients back to life seems rather unprofitable. The attitude of my associates and me toward the actual means of effecting delivery in patients with abruption is more at variance with the authors than is our actual experience. The absence of Couvelaire uterus, or uteroplacental apoplexy, in Drs. McCain and Poliakoff's report is interesting. However, the diagnosis is dependent on study of the myometrium, and/or gross inspection of the uterus at operation or autopsy. We have seen a large number of these uteri because we apply cesarean section in nearly 1 of 6 patients with abruption. We also know that the old belief that such uteri should or must be removed is totally untrue. Extensive hemorrhage and necrosis of the myometrium does not of necessity prevent uterine retraction and cessation of bleeding, for these can be directly observed at operation. Some of the worst cases have variable degrees of subserosal hemorrhages without extensive myopathologic conditions. The authors are to be commended for stressing that caution must be exercised in the interpretations of blood pressure readings when recent records are not available for comparison. Such caution is most important when operative treatment is being considered.

Dr. J. P. Greenhill, Chicago: I wonder whether you noticed the complete absence of the word trauma. Years ago we spoke about trauma, physical trauma, as one of the causes of abruptio placentae, yet neither the speakers nor the discussants have mentioned it. I agree that trauma is only a rare cause. I was amazed, and perhaps I misunderstood the statement, that only two forceps operations and one breech extraction were performed. I presumed there were more breech cases than 1 in this entire series, but I may have misunderstood the figures. I agree with the discussants about the presence or absence of Couvelaire uterus, that it was not seen because of the absence of cesarean section. I fully agree with Dr. Waters that Couvelaire uteri do not often have to be removed and that most of them will contract spontaneously. However, there are many uteri which must be removed in spite of the fact that there is no abruptio placentae. Our secretary, Dr. Hunt, wrote an excellent paper on the occasional removal of uteri for postpartum hemorrhages, even when there was little or no obvious pathologic condition. There is a definite place for cesarean section in the treatment of premature separation of the placenta, especially in patients who have aggravating toxemias that do not respond to conservative therapy. At present the cesarean section is a fairly innocuous operative measure, and with frequent resort to blood transfusion and antibiotics it is certainly a safe operation. Although I fully agree that in most cases of abruptio placentae conservative procedures should be followed, there is a definite percentage of cases in which treatment, and in my opinion conservative treatment, should be by cesarean section.

Dr. John R. McCain, Atlanta, Ga.: In answer to Dr. Rucker's question about the 2 patients who had pulmonary edema, both of these patients were put on digitalis therapy as soon as the pulmonary edema developed. Concerning Dr. McCormick's question regarding the manner of induction of labor used for the patients without any cervical dilatation, this was done by means of rupture of the membranes. No cervical pack or bag was used in these 16 cases. In regard to the Spanish windlass, I do not have the exact figures, but this type of abdominal binder was used in 15 to 20 of the cases. It is my impression that the discomfort from these binders outweighs their value. I do not want our paper to be misunderstood with reference to the incidence of uteroplacental apoplexy. Dr. Poliakoff and I do not wish to imply that this condition did not occur among the cases of our series. The point that we wish to stress is that uteroplacental apoplexy must be of relatively little clinical significance. The amount of hemorrhage that probably did occur into the myometrium of our patients was not sufficient to interfere with the contractility of the uterus or to permit persistent postpartum bleeding. In reply to Dr. Greenhill's questions, trauma did not appear as an etiologic factor in our series. Only two low forceps deliveries were performed in the 224 cases. In 2 cases delivery was by version and breech extraction. Only 1 additional breech extraction was performed, although other breech deliveries occurred. The primary purpose of this study has been to determine as accurately as possible the results that can be expected if premature separation of the placenta is treated conservatively. These results should then speak for themselves.

LOCALIZING CEREBELLAR SYNDROMES

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In 1917 Gordon Holmes[1] published his classic dissertation on cerebellar symptomatology. Despite this work, the localization of cerebellar lesions has continued to be difficult. In recent years greater understanding of the cerebellum has become available through studies of cerebellar morphology and physiology.[2] These advances have made it possible to recognize localizing syndromes which are of pure cerebellar origin and additional symptom complexes which result from combined involvement of the cerebellum and adjacent structures.[3] As a preliminary step to the understanding of these syndromes, it is important to review briefly the recent advances in the clinical aspects of cerebellar anatomy.

No attempt will be made to go into the finer details of cerebellar anatomy, physiology, histology and comparative morphology. Generalizations made for clinical purposes leave inaccuracies as to finer details but are valuable when dealing with patients.

CEREBELLAR ANATOMY

The Purkinje cells of the cerebellum are arranged in a row and have brushlike dendrites in the molecular layer. Incoming impulses reach the dendrites and cell bodies of numerous Purkinje cells. This cellular arrangement favors the production of summation, reinforcement and prolonged discharge. It suggests the important role of the cerebellum in controlling postural reflexes and tone.

The cerebellum first appears in the cyclostomes and sharks. In these animals the caudal portion is connected with the vestibular system for the maintenance of equilibrium in space. The cephalad portion receives spinocerebellar fibers to control the synergies of swimming. In land animals, the vestibular complex continues to subserve equilibration and the anterior lobe controls the synergies for walking. In higher animals an intermediate portion, the posterior lobe, develops connections wtih the cerebral cortex and controls the synergies of skilled voluntary movements of the extremities.

In man it is likewise possible to divide the cerebellum into three major functional divisions, as shown in the accompanying illustration: (1) the vestibular complex, equilibratory in function, located posteroinferiorly near the midline and forming the roof of the fourth ventricle; (2) the anterior lobe, controlling postural reflexes and the synergies of walking, located antrosuperiorly, and (3) the posterior lobes (right and left), expanding postrolaterally but continuous in the midline (cerebellar hemispheres) and coordinating ipsilateral skilled voluntary movements.

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[2] Herrick, C. J.: Origin and Evolution of the Cerebellum, Arch. Neurol. & Psychiat. **11:** 621 (June) 1924. Larsell, O.: The Cerebellum: A Review and Interpretation, ibid. **38:** 580 (Sept.) 1937. Fulton, J. F., and Dow, R. S.: The Cerebellum: A Summary of Functional Localization, Yale J. Biol. & Med. **10:** 89, 1937.

[3] Brown, Joe R.: The Anatomic Basis of Cerebellar Symptoms, Proc. Staff Meet., Mayo Clin. **19:** 169, 1944.

The vestibular complex receives its afferent supply from the vestibular system and sends fibers to the brain stem and spinal cord. The anterior lobe receives spinocerebellar afferents and sends fibers to the spinal cord via the red nucleus and rubrospinal tracts. The posterior lobes receive fibers from the opposite frontal and temporal cortex via the pons varolii and from the opposite inferior olive. The efferents from the dentate nucleus return to the contralateral cortex via the red nucleus and ventrolateral thalamic nucleus.

LOCALIZING CEREBELLAR SYNDROMES

During the past two years, a total of 48 cases of important cerebellar dysfunction have been studied on the neurology section at the Veterans Administration Hospital. These cases have been classified as to etiologic basis and as to the localization indicated. Cases are cited to illustrate the various syndromes.

1. *Syndrome of the Posterior Lobe (Neocerebellum).*—In the syndrome of the posterior lobe there is a disturbance of skilled voluntary movements while gait and static equilibrium are relatively intact. Postural fixation of the extremities is defective, and errors in rate, range, direction and force of voluntary movements occur. On examination, the ipsilateral arm may display hypotonia. When outstretched, it tends to drift downward and laterally. A similar drift is seen in the past pointing test. Coordination tests such as finger-nose and heel-knee tests show errors in rate, range, direction and force. The movements are slow and jerky, deviate from a direct line, are irregular in force and tend to overreach or underreach the mark. If the dentate nucleus is involved, movement tremor is added to the foregoing abnormalities. When the patient walks, the ipsilateral arm generally fails to swing with the associated automatic movements and the patient tends to deviate toward the side of the lesion. A specific type of nystagmus may be seen in acute or progressive lesions. Characteristically, there is coarse nystagmus on looking toward the lesion and a fine nystagmus on looking away from the lesion. The head may be rotated either toward or away from the lesion. On the affected side the tendon reflexes tend to be hypoactive and the knee jerks pendular. This syndrome is commonly seen in laterally placed tumors such as astrocytomas, in cerebellar abscess, in multiple sclerosis and in penetrating gunshot wounds. It is occasionally observed in cerebellar encephalitis. In our series of 49 cases of cerebellar ataxia there were 4 examples of this syndrome. The etiologic basis was different in each case, the syndrome being due to trauma, virus encephalitis, multiple sclerosis and astrocytoma. Differential diagnosis included lesions of the contralateral frontal (premotor) lobe or contralateral parietal lobe.

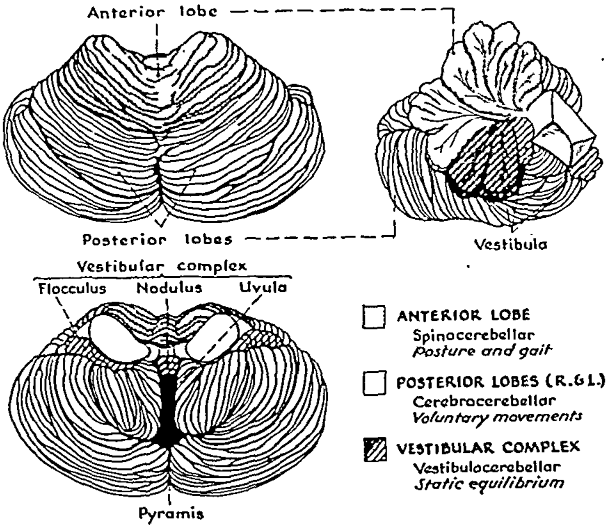

Fig. 1.—Anatomic and functional division of the cerebellum.

Case 1.—E. B., a housewife aged 24, was admitted June 24, 1947 with a history of severe head injury incurred in an automobile accident one year previously. She had sustained multiple fractures, prolonged coma and decerebrate rigidity. Neurologic examination on admission revealed severe incoordination of the right arm and leg with intention tremor. There was paresis of the right lower part of the face and right side of the tongue. Moderate dysarthria was present. The patient was capable of 64 per cent of required self care and 32 per cent of required ambulation activities. She received rehabilitation therapy and was discharged Sept. 8, 1947 capable of 100 per cent self care and 90 per cent ambulation.

2. *Syndrome of the Cerebellopontine Angle.*—The syndrome of the cerebellopontine angle is a variant of the one described in the foregoing section. The cerebellar signs early are probably due to interference with the brachium pontis and later due to pressure on one posterior lobe and dentate nucleus. The associated observations result from pressure on neighboring structures. There is varying involvement of the eighth, seventh, sixth, fifth, ninth and tenth cranial nerves as well as brain stem structures. The cerebellar signs, including nystagmus, are those described in the preceding syndrome. Tinnitus, deafness and loss of labyrinthine function are common. Diminished corneal reflex and hypesthesia of the face appear next. About this time there is usually some facial paresis followed by paresis of the external rectus muscle of the eye. Difficulty in swallowing, hoarseness, hiccups, vomiting and headache are late occurrences. Tumor in this area is the commonest cause for this syndrome.

In our series there were 3 acoustic neuromas, 2 dermoid cysts, 1 meningioma and 1 angioma.

Case 2.—K. K., a man aged 29, was admitted Oct. 1, 1948 with a history of headaches, visual difficulty and progressive deafness. He dated the onset to a boxing accident in 1945. He recently noticed incoordinate movements of his right arm and a tendency to staggering gait. Positive neurologic observations were hypesthesia of the right side of the face, absent right corneal reflex, slight weakness of the right side of the face and deafness on the right. Three was moderate incoordination and intention tremor of the right arm and leg. The patient deviated to the right on walking. Roentgenograms of the skull revealed normal conditions. At operative intervention an extremely large cystic right acoustic neuroma was subtotally resected. Postoperatively, there was gradual improvement in the cerebellar signs of the patient.

3. *Syndrome of the Superior Cerebellar Artery.*—The syndrome of the superior cerebellar artery is another variant of disturbed skilled voluntary movements. In this uncommon syndrome there is a lesion, usually vascular thrombosis, of the spinothalamic tract in the midbrain and superior cerebellar peduncle. There is ipsilateral incoordination of skilled voluntary movements with loss of pain and temperature of the opposite half of the face and body. The onset is generally sud-

den, and there is gradual improvement. One example of this was seen in this series.

4. *Syndrome of the Posterior Inferior Cerebellar Artery.*—The syndrome of the posterior inferior cerebellar artery appeared in 15, approximately one third, of the cases of cerebellar ataxias. The symptoms result from involvement of the medulla, inferior cerebellar peduncle and cerebellum. There is decided ipsilateral hypotonia, asthenia and incoordination of voluntary movements without intention tremor. In addition there is pronounced disturbance of gait with staggering to either side. The characteristic signs of medullary involvement include ipsilateral loss of corneal reflex and pain and temperature sensation to the face associated with contralateral pain and temperature loss of the body. Cranial nerve signs include vertigo, nystagmus, Horner's syndrome, difficulty in swallowing and hoarseness. The cause is usually thrombosis, and the prognosis is good for satisfactory functional recovery.

Case 3.—V. B., a garage worker aged 32, was admitted Jan. 31, 1949 with onset that morning of dizziness and headache. The gait was staggering, and the right extremities were clumsy. Examination revealed pronounced nystagmus on horizontal gaze. There was absent right corneal reflex and loss of pain and temperature sensation on the right side of the face. There was paresis of the seventh and tenth nerves on the right. Pain and temperature sense was lost on the left half of the body. There was decided incoordination of the right arm and leg. The patient had persistent hiccup and vomiting. He gradually improved over a period of two weeks. He was placed on rehabilitation service and discharged April 27, 1949 capable of all self-care and ambulation activities.

5. *Bilateral Posterior Lobe Syndrome.*—The syndrome of the bilateral posterior lobe consists of bilaterally disturbed skilled voluntary movements similar to those in the first syndrome described. Because of bilateral involvement, the gait is more severely involved and dysarthria tends to be severe. Multiple sclerosis, chronic encephalitis, tumor and dentate cerebellar atrophy may produce this syndrome, which occurred 4 times in the present series.

Case 4.—A. A., a man aged 69, first noticed trembling of his hands in 1898 after an attack of typhoid. This gradually progressed until 1938, when he was no longer able to work. Neurologic examination revealed hypotonia with increased "floppiness" on passive movement. Postural fixation of the proximal joints was diminished. There was definite incoordination and intention tremor of the arms and legs. The patient walked well, but staggering was noticed at the turns.

6. *Syndrome of the Vestibular Complex.*—The pure cerebellar syndrome of the vestibular complex is characterized by loss of static equilibrium and is most commonly seen in tumors (medulloblastoma) of the posterior aspect of the vermis cerebelli in children. It resulted from multiple sclerosis in one patient and from trauma in another. Tests for skilled voluntary movements of the extremities are normal when the patient is supine or when the trunk is supported. Attempts of the patient to maintain a sitting or standing posture result in falling in any direction. The head bobbles and oscillates on the trunk, while the trunk undergoes a similar titubation on the extremities. When walking is possible, it is reeling and drunken. There is usually nystagmus, present in all positions of the eyes.

Case 5.—R. K., a man aged 27, was admitted Aug. 15, 1946 with a history of diplopia and staggering gait. Neurologic signs included bilateral pathologic great toe reflexes, absent abdominal reflexes, dissociated ocular movements and nystagmus in all positions of the eyes. Voluntary movements of the extremities were performed normally. On sitting or standing, there was violent bobbing of the head and trunk. The patient would fall immediately unless supported. A diagnosis of multiple sclerosis was made.

7. *Syndrome of the Anterior Lobe.*—The syndrome of the anterior lobe consists of disturbed postural reflexes and walking synergies. To make such a localization, one must ascertain that static equilibrium and voluntary movements are intact. These patients walk with a wide base and stagger or deviate to both sides. The gait tends to be stiff-legged due to exaggerated positive supporting reaction. On occasion it is possible to demonstrate an extensor thrust reflex. If flat pressure is placed against the sole to spread the toes, the leg gives a reflex extensor thrust against the hand. This syndrome was seen in 1 case of degenerative cerebellar disease and in 1 cerebellar tumor in this series.

Case 6.—W. M., a man aged 34, was admitted Aug. 12, 1948 with a history of headaches for the past year. About the same time he noted onset of unsteady gait. For the past two months there had been some unsteadiness of the left hand. On examination, the cranial nerves were normal and sensation was intact. Reflexes were normal except for an absent left ankle jerk, the residuals of an old herniated intervertebral disk. There was slight impairment of coordination of the left arm. The gait was on a wide base and appeared stiff-legged; the patient staggered to both sides. There was a positive extensor thrust reflex. The diagnosis was cerebellar tumor of the anterior lobe extending into the left posterior lobe. Ventriculograms showed severe hydrocephalus. At operative intervention a large cyst was found "extending from the anterior superior portion of the vermis posteriorly to the left cerebellar lobe." Microscopic examination revealed an angioblastoma.

8. *Syndrome of Generalized Cerebellar Deficit.*—In the syndrome of generalized cerebellar deficit there is progressive unsteadiness of gait. Later the coordination of the legs and arms is impaired. Finally, static equilibrium is involved and speech becomes dysarthric. This syndrome combines the features of the pure cerebellar syndromes and results from generalized cerebellar damage. This syndrome occurred 18 times in our series, comprising slightly more than one third of the cases. The chief problem of differential diagnosis is with the spinal ataxias. Retraining technics were applied with good results.

Case 7.—H. L., a man aged 58, was admitted Oct. 7, 1945. He noticed the onset of difficulty in walking and stiffness of his legs in 1940. This gradually progressed to incoordination of the arms and dysarthric speech in 1943. He gave the history of his mother's having a similar disorder. When the case was reevaluated in 1946, the cranial nerves were normal except for dysarthria. Reflexes, sensation and motor power were normal. There was decided incoordination of the extremities. The patient was able to stand only with support and had been unable to walk for two and one-half years. The patient was placed on a retraining program of exercises in July 1946. In April 1948, at the time of his discharge from the hospital, he was capable of all necessary self care and ambulation activities. He was able to walk with two canes and to board street cars; he had developed skills in weaving, carpentry and gardening.

CONCLUSION

Based on present concepts of cerebellar anatomy, there are five recognizable pure cerebellar syndromes. These have been described as the posterior lobe, vestibular complex, anterior lobe, generalized deficit and bilateral posterior lobe syndromes. In addition, there are three variant localizing syndromes which result from associated implication of cranial nerves and brain stem structures. Illustrative cases are cited, prognosis is indicated, and the results of therapy are suggested.

ABSTRACT OF DISCUSSION

Dr. Benjamin H. Balser, New York: Dr. Brown is obviously well versed in cerebellar anatomy, physiology, pathology and clinical pathology. He delineated clinical syndromes which he correlates with disease of specific areas of the cerebellum and brain stem. The documentation of the case material in the paper is poor. The delineation of the syndromes is clear, and they were clearly presented; but the case material includes 48 cases, of which only 8 (7 cerebellar pontine angle tumors with operative treatment and 1 tumor of the cerebellar substance) had apparently been exposed or investigated. There were no remarks or evidence of any postmortem examinations in any of the other cases. The case material included generalized head trauma, encephalitis, disseminated sclerosis and tumors, all of which were rather widespread in effect, and it would take rather close correlation with the actual clinical material, either at operation or postmortem examination, to substantiate the syndromes as they were outlined. Except in progressive degenerative diseases, Dr. Brown points out what I believe is a most important fact: namely, the recovery of these patients with directed exercises and prolonged care. I believe that this is particularly important and that it has not received adequate emphasis previously. One experience which has always given me a great respect for the ability of the brain to take up the function of parts that have been removed was in regard to a man who was operated on by Harvey Cushing in 1924 for an astrocytoma. At that time the anterior and posterior lobes of the cerebellum were removed on the left side. In 1936 this patient was admitted to Montefiore Hospital in New York with recurrent signs on the right side, and at that time the right anterior and posterior cerebellar lobes were removed, so that practically all that was left was his vermis. Within six months that patient was able to leave the hospital, and at my last check-up in 1940 the man was perfectly all right, to all intents and purposes. He had a job and was able to support his family, and he had no cerebellar signs that one could detect on clinical examination.

Dr. Averill Stowell, Tulsa, Okla.: It has been shown in animals, especially in cats and in some cases in monkeys, that it is possible to remove large portions of the cerebellum and have those animals show few clinical symptoms five or six months later. It has been shown in stimulating the cerebellum that if one stimulates the paramedian lobe of the cat, or the tonsil in man, one often will produce a movement of the opposite upper or lower extremity. In other words, if one stimulates the tonsil on the right, one may produce a movement on the left. That is likewise true, as Snider and others have shown, in relation to the sensory portions of the cerebellum, where sensations are bilaterally represented both in the anterior lobe and in the paramedian area. As time goes on, there may be a change in conceptions of the unilaterality of the cerebellum, and it may be brought out that in the cerebellum all modalities of sensation are represented. In other words, optic, auditory and tactile areas can be mapped. Clinically, there are not yet any tests for the recognition of cerebellar sensation, and the only case that my associates and I have been able to find was a case that was confused with parietal tumor. The man came in with all the signs and symptoms of a brain tumor with increased intracranial pressure and papilledema, and on detailed sensory testing we found that there was a slight loss in recognition of weight in the right upper extremity. We thought that the patient probably had a parietal tumor. There were no other signs, and as a result we employed ventriculography. We performed a suboccipital craniotomy and found a cystic astrocytoma in the right cerebellar hemisphere. I think that over a period of time more sensory functions of the cerebellum will be recognized and more abnormalities detected. At present there is no clinical test for the determination of abnormalities in so-called cerebellar modalities of sensation.

Dr. Roland P. Mackay, Chicago: Dr. Brown's presentation seems to confirm a generalization which I have formulated for my own purposes. Generalizations, though dangerous, are sometimes helpful in understanding a mass of detailed information. My generalization is this: the paleocerebellum has as its function the relating of the total organism to the external environment, while the neocerebellum has as its function the relating of the various parts of the organism to each other. In archaic times and in primitive forms of animal life, such as those swimming in water, it must have been much more important for animals to be properly related to the environment and not so necessary for the various parts of their bodies to perform motor functions accurately in relation to each other. As evolution proceeded and our distant ancestors emerged from the water and began to be land-living animals, it became necessary for them to use their extremities accurately with respect to each other. The neocerebellum served this function. Therefore, in paleocerebellar lesions one sees disturbances of gait and vestibular disturbances, while in the neocerebellar lesions one sees tremors, asynergy, the rebound phenomenon and so forth.

Dr. Joe R. Brown, Minneapolis: My formulation of the syndromes was based on what was known of cerebellar anatomy in physiology and not on the clinical material that was presented in the paper. The clinical material was given primarily to illustrate conditions in which one might see these particular syndromes and not to provide documentation for them. This was apparently not clear in the body of the paper. I agree with Dr. Mackay that the part of the cerebellum which is most pronounced in the development in the animal series depends a great deal on the animal. In fish and birds, animals that have to maintain equilibrium, the vestibular portions of the cerebellum are greatly enlarged in comparison with the other parts. When animals live on land the anterior lobe becomes decidedly enlarged. When animals begin to use their extremities individually and independently for voluntary action, then the posterior lobes becomes appreciably enlarged. So the whole history of the cerebellum has been one of development in relation to the particular needs of the organism. To my knowledge the only sensation that is involved in cerebellar disease is the sensation of being able to determine weights. In unilateral lesions of the posterior lobe, either right or left, there will be some diminution in ability to assay weights properly. It is proposed by several authors that this inability is the result of the hypotonia which occurs with lesions of the posterior cerebellar lobe. Because of the diminished tone in the arm, the weight doesn't feel the same. It is possible therefore to erroneously localize a cerebellar lesion to the opposite parietal lobe. More commonly, in my experience, the reverse mistake is made. Parietal lobe lesions with reduced cortical sensation, too mild to be detected on usual testing, may simulate the ataxia of a lesion of the opposite posterior cerebellar lobe.

Scrub Typhus.—Chloromycetin has been shown to be a highly effective therapeutic agent in experimental rickettsial infections; furthermore, laboratory studies suggested that this drug might be a useful prophylactic drug against scrub typhus in man. The results of studies in patients with tsutsugamushi disease indicated (Smadel et al: *Science* 108: 160-161, 1948) that this once dread infection could be reduced to a nonfatal illness in which the fever terminated, on the average, in 30 hours after chloromycetin treatment was begun.—Joseph E. Smadel, Robert Traub, Herbert L. Ley Jr., Cornelius B. Philip, Theodore E. Woodward and Raymond Lewthwaite, *American Journal of Hygiene*, July 1949.

PROPHYLAXIS OF GONORRHEAL OPHTHALMIA OF THE NEWBORN

V. Comparison of Effectiveness of Penicillin and Silver Nitrate

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Although it has been known for several centuries[1] that ophthalmia neonatorum probably resulted from contamination of the conjunctiva during the passage of the child through the birth canal, it remained for Crede[2] to make the first great contribution to the prophylaxis of this infection. Since his introduction of the silver nitrate method of prophylaxis, there has been a remarkable reduction of gonorrheal conjunctivitis and its complications in the newborn. In spite of this there have been persistent criticisms of the use of the drugs, and numerous substitutes have been proposed. However, none has seemed to offer the advantages of the silver compounds until the introduction of penicillin. Therefore the following study was made in an attempt to compare the effects of silver nitrate and penicillin in the prophylaxis of gonorrheal conjunctivitis of the newborn.

METHODS

As previously reported,[3] studies of the bacterial flora of the antepartum cervix were made on the average ten days before delivery.

Under aseptic conditions, the cervix was exposed to direct view and the surface cleansed with sterile applicators. A sterile cotton applicator was applied to the external os and immediately immersed in 1 cc. of meat infusion broth in a sterile culture tube. The broth tube was taken to the laboratory at once, and subcultures were made on blood agar and chocolate agar plates. After the plates were smeared, the cotton applicator was returned to the broth tube and incubated at 37.5 C. under aerobic conditions. The blood agar plate also was incubated under aerobic conditions, but the chocolate agar plate was incubated at 37.5 C. under 10 per cent carbon dioxide tension. Examinations of the broth tubes and culture plates were made after twenty-four, forty-eight and seventy-two hours. All growth and colonies were examined and identified.

The bacterial flora of the conjunctiva of the newborn was studied by similar culture methods.

Immediately after section of the cord the lids were cleansed with a sterile, dry, gauze sponge. While the lids were held open a small, dry, sterile, cotton applicator was passed gently over the palpebral conjunctiva of the lower and upper lids and into the fornices; it was then immersed in a sterile tube containing 1 cc. of meat infusion broth. A separate applicator and tube of broth were used for each eye. The tube was labeled with the baby's name and eye and immediately taken to the laboratory, where subcultures were made as described in the preceding section.

Studies of the bacterial flora were repeated in an identical manner twenty-four hours after delivery.

Three methods of prophylaxis were studied. In one series of infants a comparison was made of the effectiveness of local applications of silver nitrate and penicillin. In this series, immediately after the conjunctival culture had been made 1 drop of 1 per cent silver nitrate solution was instilled into the conjunctival sac of the right eye. The lids were held open during the application and for a minimum of 30 seconds afterward in order to insure an adequate exposure of the conjunctiva and its contents to the drug. The left eye was treated by the application of penicillin ointment, made up in a concentration of 100,000 units of penicillin per gram of ointment base. The lids were opened widely and an adequate amount of the ointment (approximately 0.1 Gm.) was applied to insure complete exposure of the conjunctiva and its contents to the drug. Three hours later, after the baby had been bathed, the prophylactic procedures were repeated in an identical manner, using 1 drop of 1 per cent silver nitrate solution for the right eye and penicillin ointment for the left eye. In another series of infants a local prophylactic agent was not used; however, in these cases the mother had been given an intramuscular injection of 600,000 units of penicillin of the repository type at the onset of labor. If and when the mother had been in labor twenty-four hours, the injection of 600,000 units of penicillin was repeated. On the average the mothers received one injection of penicillin four to six hours before delivery. Although local prophylactic agents were not used in the babies whose mothers had received the penicillin, culture studies of material from the conjunctiva were made immediately after delivery and again twenty-four hours later.

Table 1.—*Frequency of Occurrence of Organisms in Antepartum Cervical Cultures*

Organism	Patients	Per Cent
Streptococci of the viridans group	267	50.3
Staph. aureus (hemo)	195	36.7
Staph. epidermidis albus	137	25.6
Candida albicans	109	20.5
Hemolytic streptococci	55	10.3
Anhemolytic streptococci	33	6.2
Esch. coli	26	4.9
Sarcina	17	3.2
B. subtilis	9	1.7
Candida stellatoidea	9	1.7
N. *gonorrheae*	8	1.5
C. pseudodiphthericum	8	1.5
Hemolytic Staph. albus	5	.9
C. xerose	5	0.9
H. influenzae	5	0.9
Ps. aeruginosa	3	0.6
N. flava	1	0.2
Staph. citreus	1	0.2
D. pneumoniae	1	0.2
A. aerogenes	1	0.2
H. hemolyticus	1	0.2
Candida Krusei	1	0.2
Candida guilliermondi	1	0.2
No bacteria	15	2.8

The results were tabulated on the basis of the types of bacteria grown or the absence of bacteria. No attempt was made to record the number of colonies of the various types of organisms, nor was any effort made to subdivide or type strains of a given organism. Each organism that was isolated was recorded as one contamination, for it represented either a potential or an actual contamination of the conjunctiva. Records were made of each eye separately because each was considered as an entity capable of harboring a different type of contamination.

The penicillin used in this study was furnished by E. R. Squibb & Son.

Read before the Section on Ophthalmology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

The Department of Obstetrics and Gynecology made the patients available for this study, which was approved by Dr. Walter L. Bierring and the Iowa State Department of Health.

From the Department of Ophthalmology, State University of Iowa Medical School. Aided in part by a grant from the Iowa Foundation for the Advancement of Science in Ophthalmology.

[1] Allen, J. H., and Barrere, L.: Prophylaxis of Gonorrheal Ophthalmia of the Newborn: I. Review of the Literature, to be published.

[2] Crede: Die Verhütung der Augenentzündung der Neugeborenen, Archiv. f. Gynaek. **17:** 50-53, 1881; **18:** 367-370, 1881; **21:** 179-195, 1883.

[3] Barrere, L., and Allen, J. H.: Prophylaxis of Gonorrheal Ophthalmia of the Newborn: III. Bacterial Flora of the Ante Partum Cervix, to be published.

RESULTS

The study of the bacterial flora of the antepartum cervix, as previously reported,[3] was made on 531 women and revealed no growth of bacteria in material from 2.8 per cent (table 1). Of the 97 per cent of samples showing colonies on the culture mediums, several showed more than one organism. Colonies of N. gonorrheae were found in cultures from only 8 patients, or 1.5 per cent of the series. The organism found most frequently was a Streptococcus of the viridans group. It occurred in 267, or 50 per cent, of the patients. Staphylococcus aureus was found in 195, or 36 per cent, and Staphylococcus epidermidis albus in 137, or 25 per cent. Higher bacteria occurred in 120, or 22 per cent, of the patients. In this group Candida albicans was the organism most frequently identified, being found in 109, or 20 per cent, of the patients. Hemolytic streptococci were found in 55 cases, or 10 per cent. Several other organisms were found less frequently (table 1).

The frequency with which the various strains of bacteria were found on the conjunctiva of the newborn immediately after delivery is recorded in tables 2 and 3. These data are recorded separately for the babies whose mothers had been given intramuscular injections of penicillin during labor and for the babies whose mothers had not been treated.

Table 2.—*Group Frequency of Organisms Occurring on the Conjunctiva of the Newborn*

	Series A *		Series B †	
	No. of Eyes	Per Cent	No. of Eyes	Per Cent
No bacteria	863	66.1	600	66.5
Gram-positive cocci	412	31.5	196	21.7
Gram-positive rods	65	5.0	30	3.3
Gram-negative rods	25	1.9	75	8.3

* Series A includes infants of mothers who had not received treatment which would alter the cervical bacterial flora.

† Series B includes infants of mothers who had received penicillin intramuscularly at onset of labor.

Approximately two thirds of the conjunctivas of infants in the two series of cases remained free from contamination; 66 per cent of the babies of untreated mothers and 66 per cent of the babies of the penicillin-treated mothers. However, cultures of material from the conjunctiva of the babies of the untreated mothers showed more gram-positive cocci and fewer gram-negative rods than those from the babies whose mothers had received penicillin during the labor. Gram-positive cocci were found in cultures from 412 eyes, or 31.5 per cent, of infants in the untreated group, whereas they were found in material from 196 eyes, or 21.7 per cent, of those in the treated group. Gram-negative rods were found in material from 25 eyes, or 1.9 per cent, of the untreated group, and in 75, or 8.3 per cent, of the treated group.

N. gonorrheae was not found in cultures from the conjunctivas in either group of cases.

The frequency of occurrence of the various strains of bacteria in cultures of the newborn twenty-four hours after delivery is recorded in tables 4 and 5. The data were recorded separately for babies whose eyes had been given prophylactic treatment locally with silver nitrate solution and locally with penicillin ointment, and for babies whose eyes had not been given local treatment but whose mothers had been given penicillin intramuscularly during labor.

Again approximately two thirds of the conjunctival cultures failed to reveal bacteria. However, there was a tendency for more bacteria to be present on the eyes treated with silver nitrate than on those treated with penicillin. Cultures of material from only 61 per cent of the silver-nitrate-treated eyes failed to exhibit growth of bacteria, whereas 71 per cent of cultures failed to produce bacterial growth after local penicillin treatment of the eyes, and 73 per cent failed to produce bacterial growth after no local treatment of the eyes. The principal difference between these figures seems to be in the number of gram-positive cocci found on the conjunctiva. In the silver-nitrate-treated eyes, 43 per cent of cultures showed gram-positive cocci whereas in the eyes receiving penicillin locally only 32 per cent and in the eyes receiving no local treatment only 27.9 per cent of cultures showed gram-positive cocci.

Table 3—*Frequency of Occurrence of Organisms in Cultures of Conjunctiva of Newborn*

	Number	Per Cent
Series A *		
No bacteria	863	66.1
Staph. aureus	193	14.8
Staph. epidermidis albus	109	8.3
Sarcina	42	3.2
Streptococci of the viridans group	34	2.6
C. xerose	28	2.1
Candida albicans	25	1.9
C. pseudodiphthericum	22	1.7
Esch. coli	20	1.5
Staph. albus (hemo)	17	1.3
B. subtilis	15	1.1
Staph. citreus	6	0.4
Anhemolytic streptococci	6	0.4
Hemolytic streptococci	5	0.4
A. aerogenes	3	0.2
Ps. aeruginosa	1	0.1
P. vulgaris	1	0.1
Series B †		
No bacteria	600	66.5
Staph. aureus	95	10.5
E. coli	63	7.0
Staph. epidermidis albus	40	4.4
Candida albicans	35	3.9
Sarcina	25	2.8
C. xerose	21	2.3
Streptococci of the viridans group	20	2.2
B. subtilis	8	0.9
Staph. citreus	5	0.5
A. aerogenes	5	0.5
Staph. albus (hemo)	4	0.4
Hemolytic streptococci	4	0.4
Ps. aeruginosa	4	0.4
Anhemolytic streptococci	3	0.3
C. pseudodiphthericum	1	0.1
P. vulgaris	1	0.1
P. morganii	1	0.1
H. influenzae	1	0.1

* Series A includes infants of mothers who had not received treatment which would alter the cervical bacterial flora.

† Series B includes infants of mothers who had received penicillin intramuscularly at onset of labor.

The difference in distribution in gram-negative rods was not significant in the cultures of material from conjunctivas of infants twenty-four hours old.

In another small series of cases there were 70 babies whose mothers were given penicillin during labor and whose eyes also received local prophylaxis (table 6). Silver nitrate drops were instilled into the right eye and penicillin ointment into the left eye, by the method previously described. While this series of cases was too small for evaluation, there seemed to be no particular difference between the conjunctival cultures of the two eyes twenty-four hours after delivery.

The babies were observed daily while in the hospital following delivery, an average of six to eight days. Outpatient observation was impossible because of the distances of their homes from the hospital.

In the short period of observation following delivery, conjunctivitis developed in 22 patients. Six of these were infections superimposed on obstruction of the nasolacrimal passages. The obstruction occurred in 4 patients who did not receive local prophylactic treatment and in 2 infants in the eye which had received silver nitrate drops locally. Infection was due to Staph. aureus in 4 of these cases, hemolytic Staph. albus in 1 case and Sarcina conjunctivae in 1 case.

Inclusion blennorrhea developed in 3 patients. In 1 infant who had not received local prophylaxis but whose mother had been given penicillin intramuscularly during labor the infection was discovered on the third day after delivery. In this case the membranes had ruptured two and one-half days before the onset of labor. Six hundred thousand units of penicillin had been administered to the mother one-half hour after the onset of labor and four hours before the infant had been delivered. In 2 infants who had been given local prophylaxis with silver nitrate in the right eye and with penicillin ointment in the left eye inclusion blennorrhea developed simultaneously in both eyes on the eighth day after delivery.

Table 4.—*Bacterial Flora of the Conjunctiva of the Infant 24 Hours of Age*

	Local Prophylaxis					
	Silver Nitrate		Penicillin Ointment		None *	
	O.D.	Per Cent	O.S.	Per Cent	Eyes	Per Cent
Total eyes	653	....	653	....	762	....
No bacteria	399	61.1	466	71.4	559	73.3
Staph. aureus	160	24.5	116	17.8	128	16.8
Staph. epidermidis albus	72	11.0	54	8.3	56	7.3
Staph. albus (hemo)	12	1.8	12	1.8	5	0.6
Staph. citreus	5	0.8	5	0.8	1	0.1
Streptococci of the viridans group	8	1.2	6	0.9	8	1.0
Hemolytic streptococci	3	0.4	..	...	2	0.3
Anhemolytic streptococci	1	0.1	..	...	..	...
Sarcina	21	3.2	15	3.3	13	1.7
Sarcina conjunctivae	1	0.1	2	0.3	..	...
C. xerose	9	1.4	6	0.9	2	0.3
C. pseudodiphthericum	7	1.1	4	0.6	3	0.4
B. subtilis	11	1.7	7	1.1	2	0.3
Esch. coli	..	...	1	0.1	11	1.4
Ps. aeruginosa	..	...	..	...	1	0.1
Candida albicans	..	...	..	...	1	0.1
Candida stellatoidea	..	...	..	...	2	0.3

* Mothers had been given penicillin intramuscularly at onset of labor.

Acute catarrhal conjunctivitis developed in 13 other babies. In 1 the infection was due to a Streptococcus of the viridans group and originated in the eye which had received penicillin ointment locally as a prophylactic procedure. The remaining 12 cases were due to Staph. aureus; 8 developed in eyes which had not received local prophylaxis and 4 originated in eyes which had received either silver nitrate drops or penicillin ointment locally. In all these cases the conjunctivitis developed later than the fifth day after birth.

Chemical conjunctivitis was observed in all eyes in which silver nitrate prophylaxis was used. It developed from eight to twenty-four hours after delivery and lasted twelve to twenty-four hours. It varied from a mild catarrhal conjunctivitis to a moderate purulent form, but there were no sequelae.

Neither chemical conjunctivitis nor sensitivity reactions were observed in the eyes in which penicillin was used.

COMMENT

In the course of this study N. gonorrheae was found in cultures of material from the cervices of 8 of 531 indigent antepartum patients. Approximately ten years previously Tucker, Trussell and Plass,[4] using similar technics, isolated N. gonorrheae from 20 of 500 indigent antepartum patients. This reduction in the incidence of N. gonorrheae in cultures of material from the antepartum cervix from 4 per cent in 1938 to 1.5 per cent in 1948 probably represented a real reduction, inasmuch as it paralleled a similar lowering of gonorrheal infections in the Gynecology Clinic.

Table 5.—*Group Frequency of Organisms Occurring in Cultures from the Conjunctiva of Infants 24 Hours of Age*

	Local Prophylaxis					
	Silver Nitrate	Per Cent	Penicillin Ointment	Per Cent	None *	Per Cent
Total eyes	653	100.0	653	100.0	762	100.0
No bacteria	399	61.1	466	71.4	559	73.3
Gram-positive cocci	282	43.2	210	32.1	213	27.9
Gram-positive rods	27	4.1	17	2.6	7	0.9
Gram-negative rods	..	....	1	0.1	12	1,6

* Mothers had been given penicillin intramuscularly at onset of labor.

The contrast between the high incidence of streptococci of the viridans group in the cultures of the cervical material, approximately 50 per cent, and the low incidence in cultures from the conjunctiva of the newborn, 2.6 per cent, was striking and suggested that the conjunctiva was seldom contaminated by passage through the cervix. However, the incidence of all types of contamination of the conjunctivas of the newborn was approximately 34 per cent. Thus it would seem that contamination occurred more frequently in the lower part of the vagina, a location not ordinarily compatible with the existence of N. gonorrheae.

Table 6.—*Bacterial Flora of the Conjunctiva of Infants 24 Hours of Age Who Had Combined Prophylaxis**

	O.D. Silver Nitrate	O.S. Penicillin Ointment
No bacteria	29	35
Hemolytic Staph. aureus	34	30
Staph. albus	19	12
Hemolytic Staph. albus	3	2
Staph. citreus	4	2
C. xerose	1	1
C. pseudodiphthericum	1	0
Anhemolytic streptococci	1	1
Esch. coli	1	0
Ps. aeruginosa	1	0
Sarcina	0	1
B. subtilis	1	0

* Mother had been given penicillin intramuscularly at onset of labor.

Approximately the same number of eyes were contaminated by passage through the birth canal whether or not the mother had been given penicillin intramuscularly at the onset of labor. The essential difference in the two series was the higher frequency of gram-positive cocci in the babies whose mothers had not been treated with penicillin and the higher incidence of gram-negative rods in the babies of mothers who had been treated with the drug. Perhaps this should have been expected from knowledge of the action of the drug on the two types of bacteria.

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[4] Tucker, W. W.; Trussell, R. E., and Plass, E. D.: Latent Gonorrhoeae in Obstetric Patients, Am. J. Obst. & Gynec. 38: 1055-1060 (Dec.) 1939.

The local administration of either silver nitrate solution or penicillin ointment apparently did not alter greatly the bacterial flora of the conjunctiva of the newborn. Cultures made from the conjunctiva twenty-four hours after the administration of the prophylactic agents locally were free from bacteria in approximately two thirds of the cases. After silver nitrate prophylaxis 61 per cent of the conjunctival cultures did not reveal bacteria, whereas after application of penicillin ointment 71 per cent did not reveal bacteria. The essential difference in the two series was the smaller incidence of gram-positive cocci in the conjunctival cultures of the infants treated with penicillin ointment locally. This was emphasized by the fact that conjunctival cultures from the infants who did not receive local prophylaxis but whose mothers had been given penicillin intramuscularly showed no growth of bacteria in approximately 73 per cent of the eyes after twenty-four hours of life. The essential difference between this and the other two groups was the smaller number of eyes from which conjunctival cultures exhibited growth of gram-positive cocci.

The postpartum courses of infants of these various groups did not show significant variation in conjunctival infections or nasolacrimal obstruction. Four cases of obstruction were observed in infants whose mothers had received penicillin intramuscularly; 2 infants had nasolacrimal obstruction in eyes which had received silver nitrate prophylaxis. Although the ratio was 2 to 1, it probably was insignificant. However, it indicated that silver nitrate prophylaxis did not tend to increase nasolacrimal obstruction.

Cases of acute catarrhal conjunctivitis, principally due to Staph. aureus, developed on the average six to eight days after delivery. Therefore, these probably were acquired exogenous contaminations of the conjunctiva rather than birth canal infections.

In 3 infants inclusion blennorrhea developed in 2, after penicillin prophylaxis and in 1 after silver nitrate. Inasmuch as neither silver nitrate nor penicillin affects the virus of inclusion blennorrhea, this was not unexpected. Because this disease is self limiting, without sequelae and of low incidence, prophylactic procedures have not been considered important.

Chemical irritation without sequelae was observed in all eyes in which silver nitrate had been used. This verified the experience with silver nitrate prophylaxis in this clinic over the past twenty-five years. With an adequate exposure of the drug to the conjunctiva and its contents, irritation always develops. However, in over 4,000 infants in whose eyes 2 per cent silver nitrate was used, and in over 14,000 infants in whose eyes 1 per cent silver nitrate was used, sequelae did not result.

Chemical conjunctivitis was not observed from the use of penicillin locally, and sensitivity reactions were not seen in babies either after the local use of the drug or after intramuscular injection into the mother at the onset of labor.

In conjunction with this study Keettel and Plass[5] of the Department of Obstetrics made observations on the postpartum courses of the mothers. An additional dose of 300,000 units of penicillin was administered to each mother who had received penicillin at the onset of labor. The second injection was made tweny-four hours after the antepartum injection of 600,000 units. The treated group showed a significantly lower incidence of postpartum fever and infections than did the control group of untreated mothers.

CONCLUSIONS

1. The diminishing incidence of Neisseria gonorrheae in cultures from the antepartum cervix points toward the possibility of completely eliminating this type of infection.

2. Complete elimination of gonorrheal infection is the best solution for the prevention of acute gonorrheal conjunctivitis of the newborn and would eliminate the necessity of prophylactic procedures.

3. Until the infection is completely eliminated, careful routine prophylaxis should be employed.

4. Exposure of the conjunctiva to 1 per cent or 2 per cent solution of silver nitrate for a time adequate for the prevention of gonorrheal conjunctivitis results in chemical irritation without sequelae.

5. The occurrence of exogenous conjunctivitis of the newborn is not affected by procedures designed for the prevention of infections caused by birth canal contamination of the conjunctiva.

6. The incidence of nasolacrimal obstruction in the newborn was not significantly different after silver nitrate prophylaxis than after penicillin.

7. The occurrence of inclusion blennorrhea in the newborn was not affected by either silver nitrate or penicillin prophylaxis.

8. From the data in this study, penicillin has no advantage over silver nitrate in the prophylaxis of gonorrheal conjunctivitis of the newborn. However, because of the low incidence of gonorrheal infection in this material an adequate comparison was not possible.

9. Therefore, similarly controlled studies should be made in a population with a higher incidence of gonorrheal infections.

10. Until adequate bacteriologic controlled trial of penicillin has been made, the safest procedure for routine use is careful application of 1 per cent silver nitrate solution to the conjunctiva immediately after delivery and again after the infant has been bathed.

ABSTRACT OF DISCUSSION

Dr. Alan C. Woods, Baltimore: The careful comparative study by Drs. Allen and Barrere of the bacterial flora of the antepartum cervix, of the conjunctival flora of the newborn infant and of material from the same eyes twenty-four hours after the local use of silver nitrate and penicillin, has yielded valuable information. Their study gave evidence of the excellent planning and their conclusions were conservative. It is only by numerous such studies from many clinics that sufficient data can be amassed and the question of the comparative value of silver nitrate and penicillin as a prophylaxis against gonorrheal conjunctivis in the newborn can be answered. These studies indicate that, although the incidence of gonorrhea is decreasing, the incidence in pregnant women is still sufficiently high to necessitate some form of prophylaxis for the newborn infant. Further, in this relatively small series silver nitrate and penicillin were equally efficacious, although neither controlled a later nongonorrheal conjunctivitis or an inclusion blennorrhea. Silver nitrate has the disadvantage of producing a chemical conjunctivitis, which, although unimportant, is probably disturbing to the mothers. Drs. Allen and Barrere finally conclude that, until adequate study under bacteriologic control has been made, the safest procedure for routine use is the careful application of a 1 per cent silver nitrate solution immediately after delivery and again after the infant has been bathed. This is in accord with the opinion of the subcommittee of the New

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[5] Keettel, W. C., and Plass, E. D.: Additional Data on Prophylactic Administration of Penicillin to Obstetric Patients, to be published.

York Academy of Medicine (1947) and of the special commmittee of the Academy (1948). Although it is probable that ultimately some form of antibiotic prophylaxis may supplant the use of silver nitrate, until further investigation establishes the superiority of penicillin prophylaxis it is wiser not to recommend a change in the existing laws. The practical immediate question is whether the investigations on the comparative value of these two forms of prophylaxis have progressed sufficiently to recommend any change in the prevailing customs. The investigation reported here today is but one of many on the same subject. It has been explored on a large scale for several years by Dr. Nicholas Eastman in Baltimore, utilizing the facilities afforded by the Women's Clinic of the Johns Hopkins Hospital and of the adjacent Mount Sinai Hospital. In Dr. Eastman's first series of approximately 6,000 births, one large group of the newborn babies received an intramuscular injection of 50,000 units of penicillin but no local prophylaxis. There were no cases of gonorrheal conjunctivitis in this group, but there were 3 unexplained deaths in syphilitic infants, in whom the possibility of a Herxheimer reaction could not be excluded, and 2 cases of sensitivity to penicillin developed in the treated infants.

Dr. Jay G. Linn Jr., Pittsburgh: A twelve month study of penicillin and silver nitrate in the prevention of gonorrheal conjunctivitis of the newborn was begun July 1, 1948 at the Elizabeth Steel Magee Hospital and concluded July 1, 1949. The bacteriologic studies in these cases were not nearly as extensive as those of Drs. Allen and Barrere. The studies were directed at determining the presence of Neisseria gonorrheae.

Penicillin was used for prophylaxis in the first and third three month periods in all newborn infants. A solution of penicillin containing 2,500 units per cubic centimeter was prepared daily. One drop of this solution was instilled in each eye at birth and daily for three days. Silver nitrate was used on all newborn infants for the second and fourth three month periods with the classic Credé method. One drop of a 1 per cent solution of the drug was instilled in each eye with a sealed wax ampule at the time of birth. No other medicament was administered to either the mother or child in this study unless for other reasons. An analysis has been made of the first nine months of this study, which includes a total of 3,214 newborn infants. Of these, 2,233 received the penicillin prophylaxis and 981 the silver nitrate. In 23, or 1 per cent, of the newborn infants of the penicillin group some conjunctival discharge developed during the first week after birth. This discharge was purulent in 6 cases, but bacteriologic studies failed to disclose N. gonorrheae. In 309 infants, or 30.4 per cent, of the silver nitrate group some conjunctival discharge appeared during the first week. Thirty-seven of these had a purulent discharge, but again bacteriologic studies revealed no organism. Five of the infants included in this study were admitted to the Eye and Ear Hospital seven to thirty-one days after leaving the Elizabeth Steel Magee Hospital for the treatment of acute purulent conjunctivitis. Two of these infants had received penicillin prophylaxis and 3 had received silver nitrate. In no instance was a positive smear or culture for N. gonorrheae obtained. None of this group had any sign of infection on leaving the maternity hospital. Conclusions from this study are similar to those of Drs. Allen and Barrere. Penicillin is as efficacious in gonorrheal prophylaxis as is silver nitrate. The purulent discharge encountered was the result of a chemical conjunctivitis and occurs much more frequently with silver nitrate. The silver nitrate routine is more practical for general usage because only one instillation is required; frequent preparation of solutions is not necessary when the wax ampules containing the drug are used.

Dr. Louis Lehrfeld, Philadelphia: There is now being completed at the Philadelphia General Hospital a one year study of the merits of silver nitrate solution compared with penicillin solution as a prophylaxis of gonorrheal conjunctivitis in the newborn. About 2,800 babies were studied. One half of them received 1 per cent silver nitrate solution and the other half an aqueous solution of penicillin, 2,500 units per cubic centimeter. In the penicillin series there were no cases of acute infectious conjunctivitis of the newborn. In the silver nitrate series 5 cases of gonorrheal conjunctivitis developed, with cure in each case in twenty-four hours with penicillin therapy. In reviewing this paper, my attention was attracted by the fact that silver nitrate caused a burn resulting in chemical conjunctivitis in every instance. Drs. Allen and Barrere claim that cure of gonorrhea in the mother would eliminate the necessity of any prophylaxis. This has been my teaching during the past fifteen years. They say that 61 per cent of the eyes examined had no bacteria after silver nitrate prophylaxis, 71 per cent had no bacteria after penicillin and 73 per cent had no bacteria when nothing was used in the eyes of the newborn but the mother had been treated with penicillin. The inference therefore should be that nothing should be put in the eyes of the newborn. I cannot understand the conclusion of Drs. Allen and Barrere that silver nitrate prophylaxis is as good as penicillin. Their own experiment proves otherwise. Only 8 mothers had gonorrhea, and none of the babies had gonorrheal conjunctivitis regardless of what was placed in their eyes. No experiment was performed by the authors in the actual presence of gonorrheal conjunctivitis of the newborn. Therefore the statements of the authors that they see no advantage of penicillin over the silver compound are not consistent with their own results. Since the ointments cannot be sterilized, how would the ointment base of the penicillin administered by the authors, influence the result of their experiment? I offered statistics at the last Annual Session of the American Medical Association pointing out that every case of acute infectious conjunctivitis of the newborn can be cured by penicillin therapy and not a single case can be cured by treatment with a 1 per cent solution of silver nitrate. If the silver compound has such mystic properties in the prevention of the disease, why is it so lacking in the cure of the disease? No one in this audience would use 1 per cent silver nitrate in the treatment of gonorrheal conjunctivitis in place of the antibiotics with their acknowledged efficacy. It is my personal opinion that silver nitrate prophylaxis is on its way out.

Dr. James H. Allen, Iowa City: I agree with Dr. Lehrfeld that silver nitrate is probably on the way out, but I am not certain that penicillin is the drug to take its place. Most statistics on this subject are based on observations and information obtained in hospitals where babies are kept under careful control. Should an inflammation begin, treatment can be started immediately before complications develop. Therefore I believe it is safe and proper to use comparative prophylactic procedures under these circumstances. However, a great many deliveries still take place in the home, which means that the newborn child does not have adequate supervision for experimental work following the delivery. For these babies I believe that a change of prophylactic procedure should not be made until it has been possible completely to prove from a bacteriologic point of view that it is safe to use another drug. Perhaps Dr. Lehrfeld will not agree with me that use of silver nitrate is a proved procedure. However, I should like to assure him that from the experimental point of view it is entirely effective, although in many instances the technic of administration of the drug may be questioned. Therefore I believe that physicians should concentrate on teaching the proper technic of administration of silver nitrate until another procedure has been proved from the experimental point of view. I should like to call attention to the fact that the difference between 61 per cent and 73 per cent sterile cultures from a conjunctiva is statistically insignificant in this series of cases, especially since it indicates a variation only in normal flora. I should also like to urge extreme caution in making an etiologic diagnosis of conjunctivitis of the newborn after the use of penicillin. I do not intend to imply that I think any reports have been made in error, but I want to call attention to the fact that there is a radical change in the cell structure of bacteria and their colonies after their exposure to the antibiotic drugs. Therefore I would be especially careful in making the exact etiologic diagnosis of conjunctivitis which may develop after treatment with penicillin. Some of the most difficult cases from a diagnostic point of view are those in which patients have been treated with penicillin, have failed to improve and then have been brought to the physician for diagnosis and further treatment. The cell structure of the organisms is so altered that they are extremely difficult to classify and diagnose.

Special Article

MEDICAL CARE ASPECTS OF PUBLIC HEALTH AND WELFARE IN JAPAN

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The four fundamental elements of the health and welfare program in Japan are preventive medicine, medical care, welfare and social security. This paper will be limited to a summary of the preventive medicine aspects of the program and a brief discussion of the medical care aspects.

ORGANIZATION

Prior to the termination of the war in 1945, there was only a primitive public health and welfare organization in Japan.

It was obvious that in order to carry out the health and welfare program a sound organization from the national to the local level would have to be established. This organization would necessarily have to conform to the general reorganization of the Japanese government in accordance with the new constitution adopted after the termination of the war. In order to clarify the situation in Japan as compared to that in the United States, it is essential to bring out the fact that the Japanese government is national in form. It is not a deferral government like that of the United States, in which residual legislative power rests in the states. In Japan, residual legislative power under the constitution rests in the Diet, which is the national legislative body. There are no state constitutions and, under the local autonomy law, state or local assemblies may pass legislation only as authorized by the National Diet. Therefore, health and welfare legislation in Japan is national in character, rather than state or local as in the United States.

The Ministry of Health and Welfare.—Since health and welfare legislation is national, an agency of the executive arm of the national government must necessarily exist to execute the laws. The Ministry of Health and Welfare, first established in 1938, is one of the cabinet ministries of the executive arm of the Japanese government. This ministry has been reorganized to integrate the four fundamentals of health and welfare. Labor activities formerly in the ministry were removed and incorporated in a new Ministry of Labor. No one of the four fundamental aspects of the health and welfare program is permitted to dominate the others, but all are on a co-equal and integrated basis, and each is headed by professionally qualified personnel from the national to local level.

The Prefecture (State) Departments.—Health departments and welfare departments has been established in all prefecture (state) governments on a co-equal status with other major departments of the prefecture governments. Within these departments are found the same essential functions as in the Ministry of Health and Welfare. They are charged with the administration of the national health and welfare laws in the prefecture.

Health Center Districts.—Health center districts have been established within the prefectures, one district for approximately each 100,000 population. The district is based on population flow or trade areas rather than on political subdivisions such as city, town or village boundaries. These health center districts administer the local health laws and programs; they contain at least one completely organized and staffed health center and as many branches as may be required.

Within the district health center organization a Medical Affairs Division has been established, in order to integrate the preventive medicine functions of the health center with the medical care agencies within the district, by establishing liaison with the local medical association and medical care facilities, such as physicians' offices, hospitals and sanatoriums. This division is also charged with the responsibility of inspecting medical care facilities to determine whether minimum standards established under the new medical services law have been met.

A Division of Medical Social Service acts as a link between the preventive medicine functions of the health center and the welfare and social security agencies within the district.

PREVENTIVE MEDICINE ASPECTS

General.—It will be possible only to mention a few of the more important of the communicable disease control programs which have been carried out within the last four years. Prior to 1945, Japanese standards of sanitation were far below those of modern progressive nations. No attempt had been made to control insects and rodents. Public water and sewage systems, which existed only in the larger cities, had been severely damaged as a result of bombings. Most of the large cities were partly destroyed by fire. People were crowded together in the remaining available shelter. Resistance to any infection was low, after years of an exceedingly restricted and unbalanced diet. There was a continuous mass movement of people into and out of the cities to obtain food. There was another mass movement of people into and out of Japan; over 6,000,000 persons were repatriated from all over the Far East to Japan, and approximately 1,000,000 foreign nationals, mostly Koreans and Chinese, were repatriated from Japan to their own countries. In such circumstances, it could be anticipated that major outbreaks of communicable diseases would occur.

Tuberculosis.—Tuberculosis has been the leading cause of death in Japan since 1934. Since 1932 the annual tuberculosis death rate had increased steadily until it reached a peak of 280 per 100,000 population in 1945. The rate has been among the highest in the world for the last thirty years. As it was considered a shameful disease, to be concealed whenever possible, few clinical cases were brought to the attention of medical authorities.

A control program was inaugurated by the Supreme Command of the Allied Powers. As a part of that program, approximately 31,000,000 persons had received BCG immunizations up to May 1949. The control program has resulted in a reduction in the mean annual death rate from 280 per 100,000 population in 1945 to 181.1 in 1948. Analysis of the deaths by age groups indicates that the entire reduction has occurred in the age groups immunized with BCG. The death rate in nonimmunized groups has not been appreciably reduced during this period. Within the immunized groups the mortality has been reduced by 88 per cent.

The BCG immunization programs will, in the future, prevent the occurrence of most of the cases of clinical tuberculosis. However, authorities are still faced with the problem of reducing deaths among that part of the population in which clinical tuberculosis has already developed. A production program for streptomycin has been undertaken, and within the next two years it is hoped that patients will receive it in all cases suitable for such treatment. It is, of course, too early to publish a detailed report on the results of this tuberculosis control program, which is considered a major program. However, it is believed that the evidence so far revealed is inescapable and cannot be ignored.

Enteric Diseases.—The enteric diseases, which were the second leading cause of death in Japan, have been reduced through a combination of environmental sanitation control and immunization and are now the third leading cause of death. Of the enteric diseases, dysentery and typhoid will be mentioned.

Dysenteries: Health education and the work of six-man sanitary teams operating as a part of the health center organization throughout the entire nation have reduced the morbidity rate of the dysenteries from a mean annual rate of 101.6 per 100,000 population for the period 1938 to 1945 to 18.3 in 1948, a reduction of 82 per cent.

Typhoid: From a mean annual morbidity rate of 63.9 per 100,000 population for the period 1938 to 1945, the typhoid rate has been reduced to 11.8 in 1948. The task of giving three inoculations, with annual booster doses, to approximately 60,000,000 persons between the ages of 3 and 60 years is a tremendous one. A considerable further reduction can be expected in typhoid and paratyphoid rates when the immunization program is completed.

Pneumonia.—Pneumonia, formerly the third leading cause of death in Japan, has been reduced from a mean mortality rate of 157.8 per 100,000 population for the period 1938 to 1943 to 66.6 in 1948; it is now the sixth leading cause of death. A further reduction can be expected, because the production of penicillin and sulfonamide drugs of good quality has been sufficient to meet all requirements only within the last year. Introduction into Japan of these drugs has been largely responsible for the reduction in mortality, as could be expected.

Infant Mortality.—Infant mortality has been reduced from a mean rate for the period 1938 to 1943 of 94.9 per thousand live births per annum to a mean mortality rate of 61.5 in 1948.

Smallpox.—As could be expected under conditions existing in 1945, a smallpox epidemic involving 17,800 persons developed, with a mean morbidity rate of 23.7 per 100,000 population in 1946. The entire nation of 80,000,000 persons has been immunized. The program has been effective so far. Only 29 cases of smallpox occurred throughout the entire nation during 1948.

Typhus.—Typhus, which had been steadily increasing since 1938 in annual epidemics, reached a peak mean morbidity rate of 41.5 per 100,000 population annum in 1946. Forty-eight million persons have been dusted with DDT (4,4′-dichlorodiphenyltrichoroethane), and 8,892,000 have been immunized with typhus vaccine. For the year 1948 the mean morbidity rate for typhus was 0.6.

Diphtheria.—The average mean annual morbidity rate for diphtheria for the period 1938 to 1945 was 75.5 per 100,000 population. The peak was reached in 1944 with an annual mean morbidity rate of 129.9. Diphtheria toxoid was unknown to the Japanese. Eighteen million children, 10 years of age and under, are being immunized with toxoid. The mean morbidity rate for 1948 is 20.3. This constitutes a reduction of 73 per cent from the period 1938 to 1945.

Health Statistics.—The average mean crude death rate for the period 1938 to 1945 of 18.3 per 1,000 population, which reached a high mean rate of 29.2 in 1945, has been reduced to 11.9 in 1948. The reduction has been largely due to the programs previously mentioned.

MEDICAL CARE

General.—On May 1, 1949 there were 71,286 physicians in Japan, 1 to each 1,122 persons, which places Japan fifth among the nations, as far as the number of physicians in relation to population is concerned.

Practice of Medicine.—Of the 71,286 physicians in Japan, 46,945 are in general practice. The majority of general practitioners are so-called second class doctors. Long before the war the Japanese adopted a policy (which is used in many countries throughout the world in an effort to solve the problem of maldistribution of an insufficient number of doctors) of providing a cheap, short term education to young men who, it was hoped, could thereby be induced to practice medicine in the rural areas.

Under the old Japanese law, hospitals of ten beds or more were closed hospitals, whether private or government operated. Staffs were paid on a salary basis. Inpatients were derived from large outpatient services. There were 3 outpatients for each inpatient reported. Group practice of medicine has been carried on in Japan through these outpatient clinics for many years. The general practitioner, under the old law being excluded from admitting patients to hospitals, was allowed to have what was called a "less-than-ten-bed" hospital, which in most cases was simply one or more rooms containing ten mats. He made his living largely by selling drugs and inducing patients to remain in his so-called hospital. There was no limit to the type of practice in which he could engage. Even major surgical procedures were attempted by many of these physicians, and thousands of patients have died each year from the vicious system of second-class doctors.

Education.—Medical School Organization: Prior to 1938, eighteen medical schools of university caliber (*Daigaku*) existed in Japan, thirteen of which were government universities. One was a prefecture medical university and four were private medical schools. In addition, there were ten medical technical colleges (*Senmon Gakko*). During the war years many additional medical technical colleges were established, until in 1945 fifty-one such schools existed to produce second class doctors. All eighteen universities had both a *Daigaku* and *Senmon Gakko* as part of their establishment. There were 5,744 students enrolled in the university type of medical school and 19,654 in the technical college.

Medical education in Japan has been patterned after the European didactic system, particularly the German system, with little emphasis on laboratory or clinical teaching. Entrance requirements to the university type of medical school were eleven years in primary school and middle school and three years in the sciences section of a university preparatory school. Internships did not exist in Japan and, on graduation, the student was automatically licensed to practice medicine. In the case of medical technical colleges, ten years of primary and middle school training were sufficient for acceptance into the medical college, the first two years of which were devoted largely to academic subjects and the last two years to medical subjects, taught by lecture. Graduates of these schools were also automatically given a medical license. Although the medical degree obtained from the technical college was different from that granted by the university medical school, the license in no way limited the type of practice. Under the rigid system of educational control in Japan, even the textbooks were prepared by or approved by the Ministry of Education. Professional associations, whether in medicine, nursing, dentistry or other professions engaged in medical care, had no voice in establishing standards of education which entitled the graduates to become members of their professions. Lay educators determined these standards.

Reorganization and Reform: Since the quality of the practice of medicine is inevitably the result of medical education, attempts to improve the quality of medical care in Japan necessitated a reorganization of the medical educational system. The Japan Medical Association expressed no interest in the reorganization of professional education. It was therefore necessary for the Supreme Command of the Allied Powers to set up a Council on Medical Education in March 1946, consisting of selected Japanese physicians, some of whom had received their professional education in the United States, England or other foreign countries. Under the guidance of the Supreme Command, this Japanese Council on Medical Education adopted certain educational reforms which, after a delay, were placed into effect by the Ministry of Education.

The proposed reform rejected the old policy of training two classes of doctors and established a goal of providing only well qualified physicians in the future. The new program requires two years of university premedical education and four years of medical school at university level, following completion of twelve years of primary and middle school. The new medical curriculum, as adopted, places emphasis on practical methods of instruction. Of the required hours, 47 per cent are devoted to the teaching of preclinical subjects, with a preponderance of these hours devoted to practical laboratory work. The remainder of the hours are devoted to clinical teaching. The distribution of time now allotted to the various preclinical courses compares favorably with that recommended by the Council on Medical Education of the American Medical Association.

Inspection of Medical Schools: All medical schools have been inspected and classified by members of the Council on Medical Education. Those which could meet the new standards by changing the curriculum and providing additional laboratory facilities have been recognized as university-type medical schools. There are eighteen of these schools. Six schools were utterly hopeless and were closed, the students being transferred elsewhere. The remainder of the schools were placed on probation. Classes in the probationary schools are permitted to continue until graduation, but no freshman classes can be admitted until the schools have met the standards for university-type schools. These probationary schools have been given until 1951 to meet the new standards of a university medical school, failing which they will be discontinued. There are twenty-one of these schools which have been on probation since the program was formally placed into effect at the beginning of the academic year, April 1, 1947.

Licensing of Physicians: A new licensing law requires examination by a National Board. Eligibility to take this examination requires one year of rotating internship and after 1951 will require graduation from a university-type school prior to internship. The desirability of continuing internships, formerly nonexistent, which has now been under test for two years, is still open to question. Under the Japanese closed hospital system, with complete paid staffs, interns were not only without a function to perform but were actually resented by many members of the staff who were not interested in training these young men. This resentment has largely disappeared, but repeated checks show that many of the interns are spending their year not in supervised practice of their profession but in studying for the national examination. Only time will determine whether the intern system has a place in Japanese medical education.

What has been stated here concerning action to reform medical education applies equally to nursing, dentistry and allied professions.

Hospitals.—Postwar Status: One thousand and twenty-seven hospitals in Japan were completely destroyed or damaged during the war, largely by fire, and at the beginning of the Occupation in 1945 there remained 2,826 civilian hospitals of ten beds or more, containing 208,178 beds. Six hundred and sixty of these institutions, with a bed capacity of 100,000, were operated either as city, state or national hospitals or by the Japanese Medical Treatment Corporation, a semigovernmental institution which had acquired a large number of hospitals prior to and during the war and which has now been dissolved. There were, in addition to the civilian hospitals, several hundred military and naval hospitals, with a capacity of 104,000 military patients.

Japanese hospitals had deteriorated during the war. Some of them had had no x-ray film for as long as three years prior to the end of the war. There was a shortage of essential drugs and instruments, since the Japanese army and navy had taken two thirds of the production of the medical supply industry. Because of shortage of cotton, dressings were used over and over, being washed in cold water and without soap, as there was a shortage of fuel to heat water and soap was rationed, one small bar per person each six months.

Nursing in Japan was considered the work of servants, so bedside nursing was practically unknown. Three classes of nurses were found who were considered doctors' assistants. The old custom, not uncommon in many other countries, of the Japanese family or a representative of the family moving into the hospital to provide bedside nursing for the patient and also to prepare his food, was the rule.

Present Status: Faced with this situation, certain actions have been taken, after long study. The Medical Service Law, which was passed in July 1948, provides for the licensing of hospitals, based on minimum standards. Like the medical schools, all hospitals are being inspected and classified under this law, which requires certain minimum staff and essential services for twenty beds or more. Those which can meet the standards will be licensed as class A hospitals. Those which are utterly hopeless will not be licensed. Those which can meet the requirements by making certain basic changes will be placed on three years' probation. Also under this law, public hospitals are open for qualified practitioners to admit patients. The less-than-ten-bed hospitals are no longer permitted to be classed as hospitals but are classed as clinics or doctors' offices. In order to protect the patients, no patients may be retained longer than forty-eight hours in these clinics. A study is being made under the Medical Service Law as to the need for hospitals throughout the nation. Provision is made under this law for grants to the prefectures (states) for construction of hospitals where needed. An additional probationary period of two years is given where new construction is required in a locality before unqualified hospitals are closed. Since the Japanese army and navy were abolished, the military hospitals necessarily had to be converted into civilian hospitals. They were placed under the jurisdiction of the Ministry of Health and Welfare. At the time of writing, ninety-eight of these general hospitals are called National Hospitals and are still under the control of the ministry, the remainder having been assigned to prefectures, cities or private organizations.

As of May 1, 1949, there were 2,885 hospitals in Japan of 20 beds or more, with a total of 243,478 beds. Seven hundred and thirty-two of these hospitals, with 113,063 beds, are operated by city, state or national governments. The 98 national hospitals, with 19 branches, have a bed capacity of 28,118. Of these beds, 6,334 are devoted to the treatment of tuberculosis. In addition, there are 143 national tuberculosis sanatoriums, with a bed capacity of 33,001, which will be increased by an additional 13,000 beds during 1949. The ratio of beds in hospitals operated by cities, prefectures and national governments to total hospital beds is 49.7 per cent. There are 3.26 beds per 1,000 population.

Adequate medical supplies are now produced in Japan to meet requirements of all hospitals. New drugs have been made available and are being produced in Japan. Promin® (sodium p,p'-diaminodiphenylsulfone-N,N'-didextrose sulfonate) is being used in the ten leprosariums for the treatment of 7,988 leprous persons. Based on weekly reports of bed occupancy, at no time have more than 50 per cent of the available beds been in use since the beginning of the Occupation.

Hospital Administration.—Under the Japanese system of closed hospitals, the medical director is responsible not only for the housekeeping in the hospitals but for the caliber of professional care rendered by his staff. In actual practice, the director of the hospital usually is a specialist and devotes his interest to the practice of his specialty, delegating to a lay chief clerk the administration of the functions of the hospital.

In an effort to solve the maladministration problem, a model hospital has been established and a School of Hospital Administration was opened at this model hospital in September 1948. So far, 200 hospital administrators have received training at this school. As a second step in this program, similar model hospitals will be established in each of the 46 prefectures, at which similar courses will be conducted, in order that over the future years modern methods of hospital administration may be carried out throughout Japan.

Medical Literature.—Due to its self-isolation, the foreign medical literature available to the Japanese medical profession was limited. Steps have been taken to bring to the Japanese medical profession modern medical knowledge by making available texts and professional journals. The American Medical Association Mission, which visited Japan in 1948, has been of great assistance in supplying copies of journals and texts.

The Japan Medical Association.—The Japan Medical Association grew out of the Japanese Hygiene Association formed in 1882.

About 1936, it is claimed, pressure began to be exerted on the medical association by the militarist groups, until in February 1942 the "Medical Treatment Law" was passed, which law provided for the compulsory formation of medical associations in which membership became mandatory.

Election of officers ceased. Officers of the national association were appointed by the Cabinet on the recommendation of the Minister of Health and Welfare, and officers of prefectural associations were appointed on the recommendation of the prefectural governor.

This medical organization remained until its dissolution in 1947, when, with the guidance of the Supreme Command, a new judicial body was formed, with a constitution patterned after that of the American Medical Association. The first election of officers of the new association took place on March 1, 1948.

When health insurance plans began operating in 1927, after passage of the law in 1922, the Japan Medical Association made a contract with the government to furnish medical care under this program, the association receiving, under this contract, funds from the government for services rendered and paying its members their fees on a point system. In 1942 the next step was taken, in which the association became a governmental body for controlling the medical profession, subsidized by national funds. The fees of physicians and hospitals were then paid by the insurance agencies, the role of the association being limited to the review of the bills as to the validity of the fees requested.

Since reorganization of the Japan Medical Association in 1947 as a professional association representing the physicians, government subsidy has ceased. The Japan Medical Association is now publishing its journal for the first time, has a voluntary membership of 55,298 physicians, representing 90 per cent of all practicing physicians in Japan and 76 per cent of the total number of doctors in the country. There are forty-six prefecture associations and seven hundred and eighty-nine district, city and ward associations. This new organization, like the newly reorganized Japan Dental Association, the Nursing Association and the Pharmacists Association, needs continued assistance and guidance until it becomes sufficiently mature to stand on its own feet. Progress is being made.

WELFARE

It will not be possible within the scope of this paper to discuss the welfare programs, other than to mention that under the "Daily Life Security Law," a public assistance law now providing assistance to 1,600,000 persons, medical care costs of medically indigent are paid for by grants-in-aid, 80 per cent national, 10 per cent prefectural and 10 per cent local.

A National Disaster Law was passed on Oct. 18, 1947, which sets up a nationwide disaster relief organization for formulating plans of operation and direction in the event of disaster and to expedite the flow of disaster supplies. Each prefecture is required to have disaster relief teams, composed of police, health officials, welfare officials, economic officials, firemen and engineers. The Japanese Red Cross, under the law, is now recognized as a quasigovernmental agency in times of disaster and is responsible for the coordination of all voluntary groups or agencies assisting the governmental agencies. Stocks of food, clothing and medical supplies are held at strategic locations for use in major disasters. This organization has worked well and efficiently in the numerous major disasters, such as earthquakes and floods, which have occurred with great regularity in Japan.

SOCIAL SECURITY

Under Social Security, there are two major programs concerned with medical care, the oldest of which has been in operation since 1927, following pasage of the law in 1922.

Health Insurance.—Established in 1922, the health insurance is an industrial insurance covering 5,100,000 workers and 11,700,000 dependents as of April 1, 1949. Contributions are 50 per cent by the employer and 50 per cent by the employee, to provide medical care benefits, maternity benefits and funeral expenses. Since the contributions are geared on a percentage basis to wages, this industrial health insurance is on a comparatively sound financial basis during this period of inflation.

National Health Insurance.—Established in 1938, national health insurance covers 32,000,000 nonindustrial persons, as of April 1, 1949. This is a voluntary insurance now made up of approximately six thousand five hundred local or village associations. Under this local option principle, any community may hold an election to determine whether or not it wishes to establish a health insurance association. If the majority vote for such an association, it becomes compulsory for the members of that community. Contributions are fixed locally within certain brackets. Medical care, maternity benefits and funeral expenses are paid. These associations are formed into a national federation. During the period of inflation following the termination of the war, about one third of the associations, being unable to pay benefits out of their reserves, because of the decreased purchasing power of the yen, suspended operations. Steps were taken by the national government to provide subsidies to partially bridge the gap between the value of the yen at the time premiums were paid and its lower purchasing power at the time benefits were paid. This subsidy is in addition to the former subsidy for paying part of the administrative costs. As a result, many of these associations which had been suspended have been reactivated by their members and are again in operation.

At the invitation of Gen. Douglas MacArthur, Supreme Commander for the Allied Powers, a representative group from the American Medical Association visited Japan to review the health insurance program. These members, Drs. Sensenich, Irons, Henderson, McCormick and Fitzgibbon, were of great assistance. Since their report has already been published in The Journal of the American Medical Association,[1] it will not be necessary to elaborate further on the health insurance program in Japan.

SUMMARY

Some progress has been made in preventing widespread disease and unrest in Japan. A sound organization has been established from the national to the local level, integrating the four fundamentals of preventive medicine, medical care, welfare and social security.

Major reforms and programs which have been undertaken in the fields of preventive medicine and medical care have been briefly outlined. An organizational framework, or blueprint, has been established in these fields. However, the largest part of the problem is still ahead. That problem is one of advice, guidance and training. In some of the professions it involves bridging a gap in professional knowledge of twenty to thirty years. Until such time as an adequate number of Japanese can be trained in modern knowledge in the fields of health and welfare for a nation of 80,000,000 people, continued assistance will be required. Japan looks to the professions of the United States for such assistance.

A. P. O. 500, San Francisco.

Clinical Notes, Suggestions and New Instruments

ARTERIOVENOUS ANEURYSM OF THE PHRENIC VESSELS

Report of a Case Following Thoracentesis

DANIEL C. ELKIN, M.D.
Emory University, Ga.

Previous reports have dealt with instances of aneurysm and arteriovenous fistula following surgical procedures.[1] This report concerns an arteriovenous fistula caused by injury of the phrenic vessels by a needle used for thoracentesis. Since to my knowledge there is no other case of this kind in the literature, it is reported because of its rarity and to point out the possibility of this injury from an accepted and frequently practiced surgical procedure.[2]

REPORT OF CASE

B. M. B., a woman physician aged 39, gave a history of pleural effusion at the age of 15, for which thoracentesis was performed. The needle was introduced on several occasions, *always through the lower posterior portion of the right side of* the chest. Tuberculosis was suspected but could not be proved bacteriologically; recovery after the withdrawal of fluid was rapid and uneventful. In 1927, in the course of a physical examination, a continuous bruit was heard over the ninth intercostal space in the posterior scapular line. At that time the patient was seen by Dr. Mont R. Reid on several occasions, and, since he believed that the intensity of the bruit was decreasing, he advised that no operation be performed.

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[1] Henderson, E. L.; Sensenich, R. L.; Irons, E. E.; Fitzgibbon, J. H., and McCormick, E. J.: Medicine in Japan, Organization Section, J. A. M. A. **139**: 1277 (April 30) 1948.

From the Whitehead Department of Surgery, Emory University.

[1] Elkin, D. C., and Banner, E. A.: Arteriovenous Aneurysm Following Surgical Operations, J. A. M. A. **131**: 1117 (Aug. 3) 1946. Elkin, D. C.: Aneurysm Following Surgical Procedures: Report of Five Cases, Ann. Surg. **127**: 769 (May) 1948.

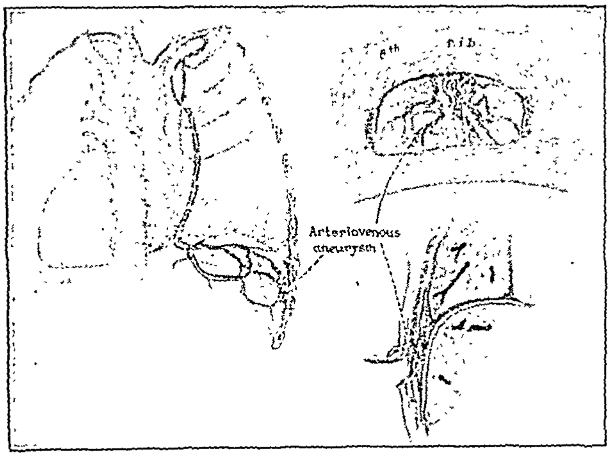
[2] This case was previously reported (Reid, M. R., and McGuire, J.: Arteriovenous Aneurysms, Ann. Surg. **108**: 643, 1938) as an arteriovenous aneurysm of the intercostal vessels. Because of the position of the bruit and because of the previous history this was the natural assumption, in which I agreed, but which proved to be incorrect at operation.

The patient continued active practice of pediatrics and had no symptoms of cardiac failure, but because of pain in the right lower part of the chest and in the region of the right shoulder, she sought further advice. There was nothing else contributory in her history except a thyroidectomy for nodular nontoxic goiter.

Examination on Dec. 16, 1948 showed her to be well developed and well nourished. There was a scar indicating the previous thyroidectomy. Her general physical condition was normal. The blood pressure was equal in both arms, 125 systolic and 80 diastolic. Examination of the heart showed no evidence of disease, and cardiac output determined by the ballistocardiograph was within normal limits, as was the blood volume. Roentgenograms showed no evidence of cardiac enlargement. Roentgenograms of the chest did not show rib erosion, although in the region of the ninth rib, posteriorly, there were small areas of calcification suggestive of phleboliths. There were a few areas of old fibrosis in the left lung, and the right portion of the diaphragm was slightly elevated.

In the posterior scapular line at the ninth rib, and limited to an area about 8 cm. in diameter, there was a harsh, continuous, machinery-like bruit, accentuated in systole. It could not be obliterated by pressure.

An operation was performed on Feb. 1, 1949. The anesthetic was intravenously administered thiopental sodium with intratracheally given nitrous oxide and ether. An incision 15 cm. long was made directly over the ninth rib posteriorly, and about 12 cm. of this rib was removed subperiosteally. Bleeding from numerous small vessels was increased. Firm pressure over the ninth intercostal bundle obliterated the bruit, and it was thought, therefore, that there was present an arteriovenous fistula of these vessels. Approximately 10 cm. of the ninth intercostal artery and vein were excised. This did not obliterate the bruit, and further exploration of the chest wall was continued through the pleura. Old adhesions had completely obliterated the costophrenic angle, and on continuing the dissection a network of dilated vessels (see figure) spreading over the diaphragm was found. Pressure on these vessels completely obliterated the bruit. A mass of arteries and veins communicating at a central point was completely excised, using ligatures of fine silk. After this was done, the bruit could no longer be heard with a sterile stethescope. The whole procedure was tedious because of the greatly increased number and size of the vessels in this region. The intercostal muscles, fascia and skin were closed, without drainage, with interrupted sutures of silk. At no time during the operation was the pleural cavity entered, and there was no evidence of collapse of the lung.



Diagrammatic representation of arteriovenous aneurysm of the right phrenic vessels, showing exposure by excision of a portion of the ninth rib.

Except for ordinary postoperative pain, the recovery of the patient was uneventful, and she was able to leave the hospital after eight days. The bruit could not be heard at any time after the operation. On examination two months later, the patient had no complaints. The pain in the right side of her chest had completely disappeared, and the bruit could not be heard.

SUMMARY

A case of arteriovenous fistula of the phrenic vessels following thoracentesis is reported. The lesion was successfully excised. No other instance of a similar condition has been found in the literature.

URETHRAL OBSTRUCTION WITH OXIDIZED CELLULOSE FOLLOWING RETROPUBIC PROSTATECTOMY

LEANDER WILLIAM RIBA, M.D.
Chicago

Oxidized cellulose in gauzelike form (oxycel®) is finding increasing favor among urologic surgeons. Postoperative hemorrhage is minimized in nearly all the cases in which it is used in the prostatic cavity following prostatectomy. When gauze packs and "pressure rubber bags" are eliminated the postoperative morbidity is definitely shortened. With oxidized cellulose or absorbable gelatin sponge (gelfoam®) patients have infinitely less pain and discomfort. Sedatives are unnecessary unless the catheter fails to drain properly. After the catheter is removed the oxidized cellulose or the absorbable gelatin sponge usually disintegrates or the material can be irrigated out.

The purpose of this report is to call attention to the retention of oxidized cellulose in the posterior urethra following retropubic prostatectomy. The retained material caused posterior urethral obstruction and severe vesical symptoms.

REPORT OF CASE

Mr. E. S. J., aged 80, was admitted to the Passavant Memorial Hospital Dec. 27, 1948 complaining of inability to void for two days. He was catheterized twice prior to admission, and 800 and 1,000 cc. of urine were obtained. He denied urinary symptoms except nocturia one or two times. The past history was noncontributory. The physical examination revealed a fairly well preserved octogenarian who was unable to void. The bladder was distended 5 fingerbreadths above the symphysis. The prostate was decidedly enlarged (grade 3) and slightly indurated with obliteration of the median groove. Results of the blood cell and differential counts were within normal limits; the bleeding time was 6 minutes 15 seconds, the coagulation time 2 minutes. The blood pressure was 134 systolic and 78 diastolic. The blood urea nitrogen was 24.6 mg. and the blood sugar 129 mg. per hundred cubic centimeters. The urine was clear and showed 20 to 30 red blood cells per high power field and a 2 plus reaction for albumin. The phenolsulfonphthalein test resulted in excretion of 70 per cent of the dye in two hours. The Kahn and Wassermann serologic tests revealed a 4 plus reaction. A scout roentgenogram of the abdomen showed sclerosis of the left innominate bone. The roentgenogram of the chest revealed clear pulmonary fields and mild cardiac enlargement. The electrocardiogram disclosed no conduction defect.

The patient was treated with intramuscular injections of penicillin, 600,000 units daily for ten days. On Jan. 5, 1949 a prostatectomy was performed. With such a large prostate a retropubic approach was recommended. Through a low transverse incision the anterior prostatic capsule became accessible. The capsule was incised transversely, and the adenoma was easily removed (fig. 1). There was only moderate bleeding. A Foley catheter was inserted, and the balloon was distended to 30 cc. within the bladder cavity. Before the capsule was closed with 00 chromic surgical gut two strips of oxidized cellulose in gauzelike form were placed inside the prostatic capsule. The wound was closed in layers, and the postoperative course was uneventful until January 12. At this time the patient complained of exceptional frequency of urination, nocturia and dysuria. The urine was loaded with pus, and there were some red cells. Rectal examination revealed a doughy prostatic capsule. The man complained of a generalized pruritus, and penicillin therapy was discontinued. The urinary symptoms continued, and on January 24 the patient was taken back to the operating room. A 24 F cystoscope could be passed easily,

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From the Department of Urology, Northwestern University Medical School; attending urologist, Passavant Memorial Hospital.

and examination showed pronounced cystitis and a large amount of black substance in the prostatic urethra. With a resectoscopic loop 45 cc. of this material was removed (fig. 2). Immature urethral mucosa was noted beneath the retained oxidized cellulose. Culture of the urine now showed infection due to Pseudomonas aeruginosa (pyocyanea), which responded to streptomycin therapy. The patient was discharged three days later in a greatly improved condition. Follow-up observations reveal satisfactory function of the bladder and clear urine.

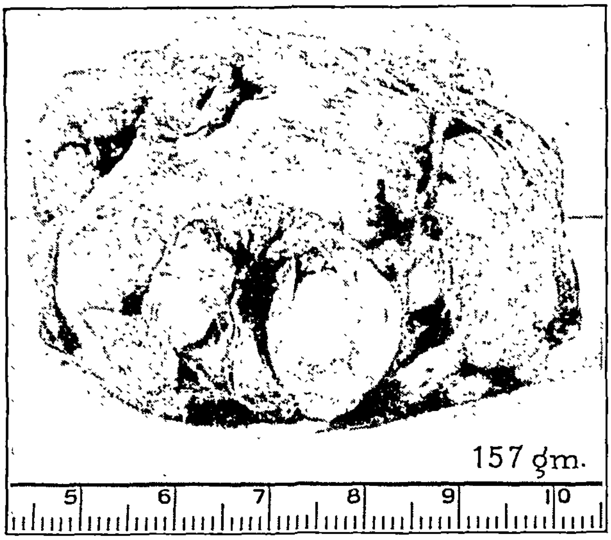

Fig. 1.—Large nodular benign hypertrophied prostatic adenoma removed by retropubic prostatectomy, weight 157 Gm.

COMMENT

This case is of interest because of the severe obstructive symptoms which developed in the patient one week after prostatectomy. As a rule when oxidized cellulose (oxycel®) or absorbable gelatin sponge (gelfoam®) is used postoperative complications do not follow. We have had 1 similar case following suprapubic prostatectomy and packing with absorbable gelatin sponge. In this patient the material was also removed with resectoscopic loop. The use of oxidized cellulose or absorbable gelatin sponge and a Foley catheter is exceedingly helpful in the first forty-eight hours following prostatectomy. The persistence of these hemostatic agents in the prostatic bed should be kept in mind. When such retention occurs the material can be removed with a resectoscope.

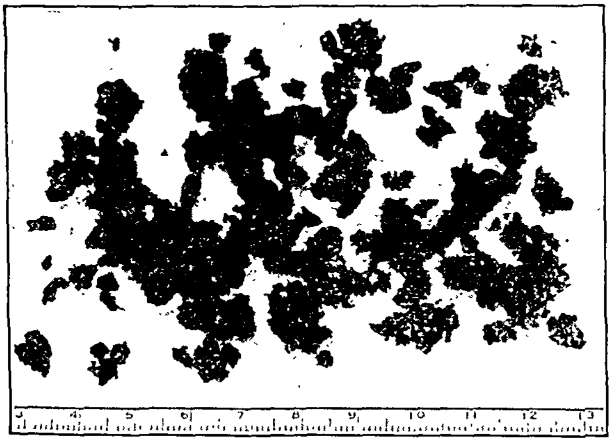

Fig. 2.—Forty-five cubic centimeters of retained oxidized cellulose was removed transurethrally from the prostatic bed nineteen days after operation.

720 North Michigan Avenue.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

AUREOMYCIN HYDROCHLORIDE.—Aureomycin is an antibiotic produced by fermentation using the organism Streptomyces aureofaciens. It is used in the form of the hydrochloride

For tests and standards, see regulation under Sec. 507. Food, Drug and Cosmetic Act, copies of which are obtainable from the Division of Antibiotics, Food and Drug Administration, Washington, D. C.

Actions and Uses.—In vitro, aureomycin hydrochloride is effective against certain strains of beta hemolytic streptococci, nonhemolytic streptococci, group D; alpha hemolytic streptococci, pneumococci, staphylococci, Escherichia coli, Aerobacter aerogenes, Klebsiella pneumoniae, Bacillus subtilis and Corynebacterium hoffmanii. In embryonated eggs it has an effect against rickettsiae and certain large viruses.

Clinically, aureomycin hydrochloride has been reported to be effective in the treatment of Rocky Mountain spotted fever, typhus, scrub typhus, murine typhus, and Brills' disease in the rickettsial group; Q fever, primary atypical pneumonia, beta hemolytic streptococcic infections, urinary tract infections produced by E. coli, A. aerogenes, staphylococci or streptococci. It should not be used in systemic infections produced by Proteus vulgaris or Pseudomonas aeruginosa. It may also be used in staphylococcic and pneumococcic infections, in acute brucellosis and in subacute bacterial endocarditis which does not respond to penicillin.

Aureomycin hydrochloride, suitably buffered, may be used locally in the eye against a variety of ocular viral infections, such as inclusion conjunctivitis, follicular conjunctivitis and ocular bacterial infections caused by susceptible organisms.

The drug produces nausea, vomiting and diarrhea in a fair number of patients.

Dosage.—Severe infections require 5 to 10 mg. per kilogram of body weight every four hours orally.

Mild infections can be treated with oral doses of 5 mg. per kilogram of body weight every four hours.

Solutions for ophthalmic use may be prepared by adding 5 cc. of sterile distilled water to 25 mg. of hydrochloride. One or 2 drops every 2 hours in the affected eye will usually suffice to control the condition.

Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y.

Capsules Aureomycin Hydrochloride: 50 mg. and 250 mg.

Aureomycin Hydrochloride: 50 mg. vial of crystalline material, each packaged with a 10 cc. vial of 0.75 per cent of sodium carbonate solution as a diluent for injection.

Aureomycin Hydrochloride: 25 mg. with sodium chloride 62.5 mg. and sodium borate 25 mg. in vials with dropper to be diluted with distilled water for ophthalmic use.

PENICILLIN FOR PARENTERAL USE FOR PROLONGED ACTION (See New and Nonofficial Remedies 1949, p. 153).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Crystalline Procaine Penicillin G (Micronized) in Oil: 300,000 units per cc., in sesame oil with aluminum monostearate 2 per cent, 10 cc. vials.

Strong Cobb & Company, Inc., Cleveland 4

Crystalline Procaine Penicillin G in Oil: 300,000 units per cc. in peanut oil with aluminum monostearate 2 per cent, 1 cc. ampins.®

THEOPHYLLINE-SODIUM GLYCINATE (See New and Nonofficial Remedies 1949, p. 330).

The following dosage form has been accepted:

First Texas Chemical Mfg. Co., Dallas, Texas

Tablets Glynazan: 0.162 Gm.

Licensed under U. S. patent 2,433,765; U. S. trademark pending.

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SATURDAY, OCTOBER 22, 1949

GIANT CELL TUMOR OF BONE

The term "giant cell tumor" was first proposed by Bloodgood, who in 1919 reported 47 patients cured by curettage and bone grafting. The British investigators, according to Willis,[1] admit the propriety of this term but prefer the term osteoclastoma, because the cells which compose the tumor are osteoclastic rather than osteoblastic. Jaffe, Lichtenstein and Portis,[2] among more recent investigators, regard the giant cell tumor as a genuine neoplasm arising from the undifferentiated supporting connective tissue of the marrow. The tumor exhibits benign characteristics clinically and pathologically, but recurrence after treatment is not uncommon and the tumor may take on invasive qualities and metastasize. Histologically, the tumor is composed of a vascularized network of spindle-shaped or ovoid stromal cells and multinuclear giant cells. In about two thirds of the cases, these tumors develop before the age of 30, the greatest number occurring in the third decade. Men and women are about equally affected. About half the tumors develop in bones of the lower limb and one quarter in the upper limb; with few exceptions they occur at the ends of the bones. The remaining 25 per cent of tumors arise in bones of the head and trunk. Most American investigators believe that the tumor starts in the epiphysis or in the epiphyseal end of a long tubular bone. British investigators, according to Willis, believe that the tumor develops in the metaphysis and may later invade the epiphysis.

The diagnosis of the lesion is reached by roentgenographic study, drill biopsy or operative exposure and excision of several parts of the tumor. Jaffe and his co-workers have expressed the belief that the diagnostic value of the radiographic multilocular appearance of the tumor has been overstressed, since a similar appearance may be observed with angioma, solitary xanthogranuloma, enchondroma and various fibrous lesions of bone. The location of the area of bone rarefaction in the end of the bone and the thinning and expansion of the cortex are far more important diagnostically. The distended area is usually delimited by a thin shell of newly formed bone which has replaced the resorbed original cortex.

Treatment of giant cell tumor depends primarily on an accurate diagnosis. Whereas sarcoma of bone would require amputation of the limb, giant cell tumor can be treated conservatively. The surest method for reaching correct diagnosis, according to Lichtenstein, is a conservative but adequate surgical exposure and biopsy followed immediately by study of frozen sections. The tumor may be treated by excision, by curettement alone, by curettement followed by irradiation or by irradiation alone. Irradiation as an adjuvant to curettage may apparently stimulate recurrence or increase the aggressiveness of the lesion. The tendency is to treat the lesion either by curettement and bone filling or by irradiation alone. Prossor[3] stresses that recurrence after irradiation is unusual. The risk of hemorrhage, necrosis and sepsis is negligible. The only disadvantage is the time required for healing and consolidation of the bone, which may be as much as eighteen months. Windeyer and Woodyatt[4] treated "osteoclastoma" in 38 cases by curettage or local excision, with or without irradiation and with radiation alone. They believe that radiotherapy alone is the treatment of choice. Ellis treated osteoclastoma in 21 cases by irradiation and is inclined toward the same conclusion. The advantages of this treatment, as he sees it, are: it is curative, painless, free from complications and capable of being used without hospitalization of the patient. An obvious disadvantage lies in the fact that complete histologic study of the tumor tissue is not available. This, however, may be overcome by use of drill biopsy before treatment is begun. Other possible disadvantages are the possible extension of the lesion after treatment, malignant transformation and disturbance of epiphyseal growth.

METHEMOGLOBINEMIA IN INFANTS

Severe poisoning caused by ingestion of wax crayons, although rare, demonstrates that finished dyes, insoluble in vitro, under certain conditions may become soluble in the body. After eating red, orange or yellow crayons, infants experienced acute, severe methemoglobinemia. Schwartz and Rector[1] reported in 1940 a case of acute "idiopathic" methemoglobinemia in a 2 week old infant; prompt disappearance of cyanosis followed administration of methylthionine chloride (methylene blue). Comly,[2] in 1945, observed that nitrates in well water caused methemoglobinemia in infants. Infants with gastrointestinal disturbances who received boiled water from poorly constructed farmyard wells experienced deep cyanosis. The water in such wells may contain large amounts of nitrates, which when ingested are converted by bacterial action to nitrites. The nitrite ion is absorbed and oxidizes hemoglobin to methemoglobin. The intravenous administration of methylene blue in the dosage of 1 to 2 mg. for each kilogram of body weight promptly relieved the cyanosis and distress.

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[1] Willis, R. A.: The Pathology of Osteoclastoma or Giant-Cell Tumour of Bone, J. Bone & Joint Surg. **31:** 236-240 (May) 1949.

[2] Jaffe, H. L.; Lichtenstein, L., and Portis, R. B.: Giant Cell Tumor of Bone: Its Pathologic Appearance, Grading, Supposed Variants and Treatment, Arch. Path. **30:** 993-1031 (Nov.) 1940.

[3] Prossor, T. M.: Treatment of Giant-Cell Tumours of Bone with a Review of Twenty-Five Cases, J. Bone & Joint Surg. **31:** 241-251 (May) 1949.

[4] Windeyer, B. W., and Woodyatt, P. B.: Osteoclastoma: A Study of Thirty-Eight Cases, J. Bone & Joint Surg. **31:** 252-267 (May) 1949.

[1] Schwartz, A. S., and Rector, E. J.: Methemoglobinemia of Unknown Origin in a Two Week Old Infant, Am. J. Dis. Child. **60:** 652 (Sept.) 1940.

Johnson and his co-workers [3] of Iowa State Department of Health examined the water of many rural wells for the nitrate content and found that the water in several contained nitrate nitrogen in amounts sufficient to produce cyanosis in infants. The location and condition of wells in rural districts are such as to permit the contamination of water by seepage from barnyards and other sources rich in nitrogenous matter.

Ferrant [4] reported 2 cases of methemoglobinemia in infants as a result of the use of well water containing excessive amounts of nitrates. Well water was used or the dilution of powdered milk in the formula.

The anoxemia which results from the high level of methemoglobin in the blood explains the shock, dyspnea, tachycardia and prostration. The methemoglobin level in the blood may be above 50 per cent of the total pigment. Faucett and Miller [5] report 3 cases of proved methemoglobinemia in infants caused by ingestion of water with a high concentration of nitrate ion. Two of the babies were treated with methylene blue, and both responded promptly, the first within thirty minutes and the second within twenty minutes. Methemoglobinemia in newborn infants, these authors warn, may also result from absorption of aniline dye from newly stamped and unlaundered diapers.

Why methylene blue should be effective in the treatment of methemoglobinemia has not been explained. Methylene blue has the property of transforming in vitro hemoglobin into methemoglobin. Methylene blue itself is transformed into the leuco form, which in turn reacts with oxygen and forms again methylene blue. The administration of a methemoglobin-forming agent to patients suffering from methemoglobinemia would seem illogical, but clinical experience demonstrates that methylene blue does act as a specific in the treatment of this condition.

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[2] Comly, H. H.: Cyanosis in Infants Caused by Nitrates in Well Water, J. A. M. A. **129**: 112 (Sept. 8) 1945.

[3] Johnson, G.; Kurz, A.; Cerny, J.; Anderson, A., and Matlack, G.: Nitrate Levels in Water from Rural Iowa Wells: A Preliminary Report, J. Iowa M. Soc., **36**: 4 (Jan.) 1946.

[4] Ferrant, M.: Methemoglobinemia: Two Cases in Newborn Infants Caused by Nitrates in Well Water, J. Pediat. **29**: 585 (Nov.) 1946.

[5] Faucett, R. L., and Miller, H. C.: Methemoglobinemia Occurring in Infants Fed Milk Diluted with Well Water of High Nitrate Content, J. Pediat. **29**:593 (Nov.) 1946.

MAN'S CAPACITY FOR ALCOHOL

The use of alcoholic drinks, like other social customs, has its traditions. The eighteenth century in Britain, for example, was the era of the so-called three-bottle men; indeed, the accounts of not only the drinking but also the eating customs among certain social classes in that period remind one of modern descriptions of a Russian banquet. During that era of gargantuan meals gentlemen, at the close of a dinner, imbibed the contents of three bottles, presumably fifths, of port wine. At the end of this performance, which had been preceded by the usual dinner wines, some of the gentlemen were under the table, which, since port is habitually fortified with more alcohol than is produced by natural fermentation, is not surprising. Furthermore, this amount was consumed in a short period. In the eighteenth century, too, Peter the Great of Russia, a man of almost gigantic proportions, started his stag dinners by requiring each guest to empty at one gulp a silver flagon filled with vodka. This flagon still stands on the table in the little dining room where he entertained his intimate friends and must have a capacity of at least a pint. Today a common form of entertainment is the cocktail party; while some such parties may be almost decorous, others degenerate into debauches.

For years physicians concerned with patients suffering from chronic alcoholism have been attempting to elicit at least an approximate estimate of the daily consumption of liquor. Many medical historians have used such vague terms as "alcohol in moderation." A record giving the consumption of alcohol in variety and drinks per day is not accurate, for the size of a drink may vary. Whisky, perhaps the most popular of the ardent spirits, varies in the percentage of alcohol which it contains. Even if the drinker buys by the bottle and estimates his consumption in bottles per diem, this variation in alcohol content prevails. The situation is further confused by the fact that many chronically alcoholic persons are members of the Ananias Club.

Alcoholic persons are more likely to underestimate than to overestimate their consumption. The recent work of Newman [1] suggests that some deliberately overestimate their alcoholic ration, probably from pure braggadocio. Newman's researches indicate that a man weighing 70 Kg. can metabolize about 26½ ounces (751 Gm.) of 100 proof whisky in twenty-four hours. Any definite increase in this amount would raise the alcohol content of the blood and brain to a point where coma would supervene. This limit could be exceeded only for a brief period, probably a matter of hours. Anyone on a daily ration of a quart of whisky of this potency would show obvious signs of intoxication. Furthermore, the idea that habituation produces increased facility in metabolization is not supported by scientific evidence. Large and heavy persons can consume somewhat more, but merely on account of their bulk and not because of any increase in ability to metabolize alcohol. Newman provides, for the first time, an accurate standard of human capacity for the consumption of alcohol.

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[1] Newman, H. W.: Science **109**: 594 (June 10) 1949.

Current Comment

SURVEY OF BLOOD BANK RESOURCES

The Committee on Blood Banks which was established by the House of Delegates has undertaken a study to evaluate the blood bank resources throughout the country. During the second week of October the Committee mailed questionnaires to more than 1,500 blood banks and about 5,100 hospitals without blood banks. A letter accompanying each questionnaire stressed the importance of blood banks in modern methods of medical care and the need for a comprehensive and accurate study of blood bank facilities. This questionnaire is the first step in determining the capacity, equipment, personnel, inventory, general processing procedures and arrangements for emergency cooperation among blood banks. Because information concerning blood utilization by hospitals is needed to supplement the data requested from blood banks, the Committee mailed questionnaires printed in blue to hospitals without blood banks and in black to blood banks and Red Cross blood centers. Questions concerning many technical aspects of blood bank operation could not be included. The principal purposes of the questionnaire are to determine where and how much blood is being used annually and to present a general picture of the operations of blood centers and blood banks in obtaining and distributing the blood. In the background is the question of the role of blood banks in a national emergency. The success of the survey depends on the cooperation of those receiving the questionnaires. The Committee will appreciate complete and prompt replies.

SYMPOSIUM ON HIGH ALTITUDE BIOLOGY

An International Symposium on High Altitude Biology will be held in Lima, Peru, Nov. 21-30, 1949, under the auspices of UNESCO and the Government of Peru. A considerable part of the population of Peru lives on the elevated slopes of the Andes and in its large plateaus. Approximately 5,000,000 persons live at altitudes over 10,000 feet, and there are several towns at 14,000 feet and higher. The anoxia, which is the result of low oxygen tension in the inspired air, produces definite physiologic characteristics, but there also occurs a surprising degree of tolerance. These characteristics have been studied in the past by members of several international high altitude expeditions and by Peruvian investigators during the past two decades. The Faculty of Medicine of the University of San Marcos, Lima, Peru, organized the Institute of Andean Biology in 1931. The institute was aided by the Rockefeller Foundation, which has supplied training to most of the members and equipment. A permanent laboratory was established in Huancayo, at 11,000 feet of altitude, while another laboratory is to be erected in Morococha, a mining town at 14,540 feet. An annex of this laboratory operates at an altitude of 16,600 feet. Comparative studies are carried out in research laboratories of the Department of Pathological Physiology, Faculty of Medicine, Lima, at sea level. Men living permanently at high altitudes have been studied at rest and during physical activity. The findings have been compared with those made at sea level. The clinical and pathologic aspects associated with loss of adaptation and the problem of fertility in animals found in high places were the special subjects of investigations. Observations also have been made on newcomers at high altitudes and on men returning to sea level after a prolonged residence at high altitudes. These and other problems are to be discussed at the forthcoming symposium.

INTERSCAPULAR HIBERNOMA

The interscapular, or so-called hibernating, gland is one of the best known primitive fat organs. In man it probably is the homologue of the hibernating gland of rodents. The gland is a paired organ and extends over a considerable area in the region of the shoulders and the sides of the neck. Its fat tissues are abundantly vascularized by capillary blood vessels. In certain lower animals that part of the gland which is provided with polygonal fat-laden cells is believed by some to serve as a source of food supply during the period of hibernation. Shattock[1] states, "During hibernation these reserves are used up and dwindle away, a residuum of connective tissue alone remaining, to be again replaced before the arrival of the next hibernating season." Others have expressed the belief that the fat in these localities is not disturbed either during hibernation or starvation. However, the cells obviously are primarily for the storage of fat. The designation hibernoma, which is applied to certain tumors of primitive fat organs, is inappropriate but is sanctioned by usage. In 1905 Merkle described a tumor which arose, he thought, from the cells of a sebaceous gland rather than from those of a primitive fat organ. Since then, according to Brines and Johnson,[2] reports of 9 probably authentic cases of hibernoma have appeared in the medical literature. These observers have added another. Inglis[3] described a solid tumor derived from the fat cells of the interscapular gland. The growth was composed of foam cells in the cytoplasm of which sudan III revealed innumerable fat particles. His case and the one recorded by Brines and Johnson are believed to be the only recorded cases of solid growths originating in primitive fat organs. Both were composed of sudanophilic fat cells of the embryonal type. In the solid growth described by Symmers[4] some of the cells were filled with fat, but the origin of the tumor was doubtful.

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[1] Shattock, S. G.: On Normal Tumour-Like Formations of Fat in Man and the Lower Animals, Proc. Roy. Soc. Med. (path. sect.) **2**: 207, 1908-1909.

[2] Brines, O. A., and Johnson, M. H.: Hibernoma: A Special Fatty Tumor, Am. J. Path. **25**: 467, 1949.

[3] Inglis, K.: The So-Called Interscapular Gland and Tumours Arising Therein, J. Anat. **61**: 452, 1926-1927.

[4] Symmers, D.: Spindle and Giant Cell Sarcoma Arising from Unidentified Precordial Bodies, Arch. Path. **37**: 180, 1944.

ORGANIZATION SECTION

Official Notes

ABSTRACT OF MINUTES OF MEETINGS OF BOARD OF TRUSTEES HELD SEPTEMBER 23-24

The Executive Committee of the Board of Trustees held a two day meeting on September 21 and 22, which was followed by a two day meeting of the Board of Trustees. Space does not permit a full report of the meetings. Here, however, are mentioned those actions which are of more or less general interest.

Both the Executive Committee and the Board of Trustees gave most careful consideration to the budgets submitted by the various councils, bureaus, departments and committees and made drastic reductions in some of them with a view to bringing the total amount of the requests made into line with the anticipated income of the Association for the year 1950. In addition, however, the Board found it necessary to make a 10 per cent reduction in all budgets, with the understanding that if any of the councils, bureaus, departments or committees are unable to carry on their work with the reduced budget they may appeal to the Board of Trustees for further consideration. The principal reason for that action is that some budgets consist only of salaries and the salary item cannot be reduced without discharging employees who at present seem to be essential.

Appointments

Archives of Ophthalmology.—Additional members on Editorial Board: Dr. Jonas S. Friedenwald, Dr. Kenneth C. Swan and Dr. John Dunnington.

Council on Pharmacy and Chemistry.—Dr. George W. Thorn, Dr. Windsor C. Cutting and Dr. Henry K. Beecher to succeed Drs. David Barr, Edward Churchill and W. Barry Wood Jr., respectively.

Advisory Committee to Cooperative Medical Advertising Bureau.—Dr. Stanley B. Weld to succeed himself.

Archives of Pathology.—Dr. Granville A. Bennett to succeed Dr. Ludvig Hektoen (resigned) as Chief Editor.

Council on Industrial Health.—Dr. Stanley H. Osborn, Prof. Philip Drinker, Dr. James G. Townsend and Dr. Alfred H. Whittaker, ex officio members.

Consulting Committees.—The Board, acting on the action of the House of Delegates and on the recommendation of the Council on Industrial Health, approved the addition to the Council of consultants in environmental hygiene and sanitation, to include experts in the several fields of atmospheric pollution and harmful physical, chemical and biologic agents having industrial uses, and on human relations in business and industry, to include qualified experts in psychiatry, industrial psychology, sociology and personnel relations.

Co-Chairmen of Local Committee on Arrangements for San Francisco Session

The nomination by the San Francisco County Medical Society of Dr. John W. Cline and Robertson Ward as co-chairmen of the Local Committee on Arrangements for the San Francisco Session of the Association was confirmed by the Board of Trustees.

Appointment of Representatives

Dr. E. J. McCormick was appointed to represent the American Medical Association at the inauguration of the president of Marietta College; Dr. W. B. Martin, at the installation of Dr. Arthur Hollis Edens as president of Duke University; Dr. L. H. Bauer, with Dr. E. B. Howard and Dr. James R. Miller, on the National Health Council, and Dr. E. L. Henderson, at the meeting of the World Medical Association in place of Dr. W. F. Braasch, who was unable to accept the appointment.

Liaison Committee to National Association of Science Writers

Drs. Austin Smith, L. A. Buie and Percy Hopkins were appointed a liaison committee to the National Association of Science Writers, with Mr. L. Rember and Mr. John Bach who will serve as ex officio members.

Resolutions on Hill and Taft Bills

The Board, on motion duly seconded and carried, voted to approve the recommendation of the Executive Committee that a report be made to the House of Delegates that the resolutions on the Hill and Taft bills, which request that the Board hold hearings on the resolutions at which any interested person may appear to present his views, have been carefully considered and that the Board feels that it is not its province to hold hearings. The Board also voted that a notice be printed in The Journal to the effect that any member desirous of testifying regarding these bills should contact the National Liaison Committee, appointed at this meeting to confer with Congress.

Complimentary Subscriptions for Japan and Mexico

Authorization was given to send the Japan Medical Association one copy of each of the journals published by the Association for a period of one year, at the end of which time the matter will again receive consideration. Authorization was also given for including in the shipment any surplus stock of old magazines on hand, as well as a copy of New and Nonofficial Remedies, the History of the American Medical Association and any other books which it is deemed may be of interest to the Japan medical group.

It was also decided to send a complimentary subscription to The Journal to Dr. Ignacio Chavez, honorary president of the Sociedad Interamericana de Cardiologia, Mexico.

Council on Physical Medicine and Rehabilitation

A change in the name of the Council on Physical Medicine by the addition of the word Rehabilitation was approved by the Board.

Public Health Exhibit

Authorization was given to participate in the Public Health Exhibit in connection with the Scientific Assembly of the Medical Society of the District of Columbia, and funds to defray the expense were appropriated.

German Edition of Hygeia

Permission was granted to Hippokrates-Verlag Marquardt & Cie, Stuttgart, for the publication of a German edition of *Hygeia,* with the understanding that if the periodical is not one of good standing permission will be withdrawn.

Twelve Point Program

Authorization was given to the Bureau of Public Relations for the reprinting and distribution of 10,000 copies of the Twelve Point Program of the Association.

Cooperation with CARE

After hearing a report of the dissertation made by the Director of the Educational Unit of CARE to the Executive Committee in regard to the proposal to furnish books and magazines to universities and libraries of foreign countries, the Board voted that the Association advertise CARE through all the mediums available.

Appointment of New Committees

In accordance with resolutions introduced into the House of Delegates at the Atlantic City Session, the following committees were appointed:

Committee on General Practice, to consider further the problems of medical practice:

Dr. Stanley R. Truman, Oakland, Calif., Chairman.
Dr. Paul A. Davis, Akron, Ohio.
Dr. William L. Pressly, Due West, S. C.
Dr. George S. Klump, Williamsport, Pa.
Dr. Joseph B. Copeland, San Antonio, Texas.

Committee to Confer with Congress (National Liaison Committee) with a view to developing legislation that will meet the objectives of the American Medical Association program in its effort to solve the problem of making medical care more accessible to the American people:

Dr. Harvey B. Stone, Chairman.
Dr. R. L. Sensenich.
Dr. Louis H. Bauer.
Dr. R. B. Robins.
Dr. John W. Cline.
Dr. Frank Lahey.
Dr. Frank F. Borzell.
Dr. James R. McVay.
Dr. G. F. Lull }
Dr. E. L. Henderson } ex officio

Committee on Displaced Physicians, to study the problems of displaced physicians generally and as far as possible to cooperate with the International Refugee Organization and the various state authorities in furthering the resettlement of these persons in a spirit of friendly cooperation with unfortunate colleagues:

Dr. J. J. Moore, Chicago, Chairman.
Dr. Creighton Barker, New Haven.
Dr. Alex M. Burgess, Providence, R. I.
Dr. Jacob J. Golub, New York.
Dr. E. B. Howard, Chicago.
Dr. G. F. Lull, Chicago.

Investments

As is customary, the Finance Committee and the Board deliberated on the investments of the Association; that is, on the purchase and sale of bonds and on the recommendations of Standard & Poor's Corporation, which acts as the Association's advisers on investments.

Discontinuation of Committee on Scientific Research

The Board decided to discontinue the Committee on Scientific Research, inasmuch as there are many foundations now making large grants for research which duplicate essentially the work of this Committee.

Appropriations for other research were approved by the Board.

Commission on Chronic Illness

A report of progress was received from the Chairman of the Commission on Chronic Illness, and the Board appropriated funds for the employment of a director and made space available in the headquarters of the Association for the personnel to carry on the work of this Commission.

General Practitioner's Award

The Board voted that presentation of the General Practitioner's Award be made in the House of Delegates at the conclusion of the Tuesday Session and that it be followed by a social hour.

National Conference of County Medical Society Officers

The date set for the National Conference of County Medical Society Officers (Grass Roots Conference) is Thursday night, December 8, at the Statler Hotel, Washington, D. C.

Reports from Representatives

Reports were received from: Dr. H. R. Viets on his attendance at the meeting of the Interim Coordinating Committee on Medical and Biological Abstracting of UNESCO, held in Paris, June 1-4, 1949; Major General Guy B. Denit on his attendance at the meeting of the British Medical Association at Harrogate, June 24 to July 1; Dr. E. B. Howard on his attendance at the conference called by the National Sanitation Foundation at the School of Public Health of the University of Michigan and Dr. W. W. Bauer, who went to Germany at the request of the Office of Military Government for Germany (U. S.) to help survey the present German situation and to assist in the development of a modern progressive program in public health education in the United States zone and also for policy guidance in the formation of a central German public health organization for the projected Western German State.

PIECEMEAL SOCIALIZATION OF MEDICINE

Letter to the Secretary of the American Medical Association

Dear Dr. Lull:

The American College of Radiology views with alarm and dismay all proposed programs relating to the distribution of medical services which place the diagnostic aspects of medicine in a category apart from the general practice of medicine.

The convening of the 81st Congress brought forth a number of legislative programs so worded. Examples are: S. 5, the original Wagner-Murray-Dingell bill; S. 1679, the Thomas-Murray-Dingell bill; S. 1106, the Lodge bill; S. 1456, the Hill bill, and S. 1907, the Flanders-Ives bill. The treatment of diagnostic medicine under these legislative schemes has varied all the way from pinpoint socialization under S. 1106 and classification as a hospital service in S. 1907 to socialization in common with all of medicine but under the separate category of "auxiliary services" in S. 5 and S. 1679.

In addition to this legislation, not a few prominent members of the medical profession have recently promulgated similar plans emphasizing a difference in what they have termed "the practice of the diagnostic specialties" and the practice of medicine. The American College of Radiology is most disturbed by these medical spokesmen in that they have apparently seen in the socialization of diagnostic medicine relief from demands for socialization of all medicine. Theirs is a tragic error. The medical profession and most of the rest of the nation has come to understand that medicine cannot and will not be socialized in a vacuum. The socialization of any group, or segment of a group, is but a precursor of things to come. Medicine must not weaken its stand for freedom by partial appeasement and thus fall victim to piecemeal socialization. Abraham Lincoln observed, "No nation can long endure half slave and half free." It should be even more obvious that no profession can permanently maintain this imbalance.

It would be appreciated if you would bring this statement on the part of the American College of Radiology to the attention of all members of your group.

William C. Stronach,
Executive Secretary.

Washington Letter

(From a Special Correspondent)

Oct. 17, 1949.

Donora "Smog" Report Fails to Solve Mystery of Deaths

At a press conference on October 13, Federal Security Administrator Oscar R. Ewing released a 173 page printed technical report on the Donora (Pa.) "smog" disaster of October 1948, which claimed 20 lives. The report is based on an intensive study conducted on the scene by Public Health Service (Division of Industrial Hygiene), with the cooperation of the Bureau of Mines, Weather Bureau and other federal agencies.

The report, which is procurable ($1.25) from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., discloses these facts:

A total of 5,910 persons, 43 per cent of the Donora population, were affected to greater or lesser degree by the contaminant. The principal effect was irritation of the respiratory tract, with cough as the predominant single symptom.

A direct relationship of incidence and severity with increasing age was noted. Ages of persons who died ranged from 52 to 84 years, with a mean of 65 years, and 60 per cent of the inhabitants in the 65 or over group reported they were affected.

"While no single substance was responsible for the October 1948 episode, the syndrome could have been produced by a combination, or summation of the action, of two or more of the contaminants," says the report. "Sulfur dioxide and its oxidation products, together with particulate matter, are considered significant contaminants. However, the significance of the other irritants as important adjuvants to the biological effects cannot be finally estimated on the basis of present knowledge."

Recommendations dealt mainly with reduction of chemical fumes and particulate matter from industrial plants and establishment of a weather forecasting system to alert the community of impending atmospheric conditions conducive to "smog" danger.

Senate Health Subcommittee to Continue Investigation

The subcommittee on health legislation of the Senate Labor and Public Welfare Committee will "continue its study of the health problems of the nation and of legislative proposals relating thereto," under provisions of a Senate resolution which authorizes $10,000 for this purpose. Both the subcommittee and its parent committee have cleaned their calendars of all major health bills referred to them in 1949—with the notable exception of compulsory health insurance—but the $10,000 authorization was requested in the event the Murray subcommittee elects to obtain new data during the winter months. According to reports, it will attempt to gather new information on voluntary prepayment medical and hospital care plans, with the view of using such material in connection with hearings on health legislation in the second session of the 81st Congress.

Aid to Medical Education Passed Over Until 1950

Inauguration of a new federal program for financial support of medical schools and provision of scholarships has been passed over by Congress until 1950, as the result of failure of the House Rules Committee to grant a rule permitting a floor vote on the bill (H.R. 5940 and S. 1453) in the closing days of the session. The committee held a hearing on the measure October 13, two days after H.R. 5940 had been reported favorably by the House Interstate and Foreign Commerce Committee. The bill was "passed over" without prejudice without a vote being taken, thus ending chances of floor consideration before adjournment of the first session of the 81st Congress.

In acting favorably on H.R. 5940, which is identical to the Senate bill (S. 1453), the Interstate and Foreign Commerce Committee made only one change: Schools of optometry were added and optometric scholarships provided on the same basis as medicine, dentistry, nursing, public health and dental hygiene.

Pigeonholing the prospective legislation by the Rules Committee was attributed to (1) tardiness of the forwarding action taken by the Insterstate and Foreign Commerce Committee, which had had the program under consideration for several months, and (2) pressure exerted by certain nursing groups in North Carolina and Georgia who objected to accrediting procedures.

6,500 Physicians Participating in U.M.W.A. Medical Program

There are now 6,500 physicians and 600 hospitals participating in the medical program of the Welfare and Retirement Fund, United Mine Workers of America, according to latest figures. Between January 1 and September 1 of this year, 39,000 persons were hospitalized and 375,000 patient-days of hospital care provided.

Dr. Warren F. Draper, program director, expressed gratification at the reaction of participating physicians to suspension of payments from the United Mine Workers of America fund. The suspension order was issued September 17 and four weeks later letters were still being received from physicians, said Dr. Draper, advising him of their willingness to continue to accept miner patients even though there was no assurance that bills would be paid.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

Annual Conference of State Secretaries and Editors, Chicago, A. M. A. Building, Nov. 3-4. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Ambulatory Fracture Association, Toronto, Canada, Royal York Hotel, Oct. 24-27. Dr. H. W. Wellmerling, 120 S. LaSalle St., Chicago 3, Secretary.

American Academy of Pediatrics, San Francisco, Nov. 14-17. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Clinical and Climatological Association, White Sulphur Springs, W. Va., The Greenbrier, Oct. 27-29. Dr. James Bordley III, Bassett Hospital, Cooperstown, N. Y., Secretary.

American Medical Women's Association, Midyear Meeting, Tucson, Ariz., Nov. 10-11. Dr. Grace Talbott, 49 W. 49th St., New York 20, Corresponding Secretary.

American Public Health Association, New York, Oct. 24-28. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 5-7. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

American Society of Tropical Medicine, Memphis, Tenn., Nov. 6-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Nov. 10-12. Col. James M. Phalen, Army Institute of Pathology, Washington 25, D. C., Secretary.

Central Society for Clinical Research, Chicago, Drake Hotel, Nov. 4-5. Dr. Kenneth G. Kohlstaedt, 960 Locke St., Indianapolis 7, Secretary.

Conference of State and Provincial Health Authorities of North America, New York, Oct. 28. Dr. Russell O. Saxvik, State Health Officer, Bismarck, N. D., Secretary.

International College of Surgeons, United States Chapter, Atlantic City, Haddon Hall, Nov. 7-12. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago 10, Secretary.

Inter-State Post Graduate Medical Association of North America (International Medical Assembly), Philadelphia, Oct. 31-Nov. 3. Dr. Tom B. Throckmorton, Equitable Bldg., Des Moines, Iowa, Secretary.

National Gastroenterological Association, Boston, Hotel Somerset, Oct. 24-26. Dr. Sigurd W. Johnsen, 1818 Broadway, New York 23, Secretary.

Neurosurgical Society of America, Quebec, Canada, Chateau Frontenac, Oct. 30-Nov. 1. Dr. Edward Schlesinger, 710 W. 168th St., New York, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Biltmore Hotel, Oct. 24-27. Dr. F. Maxey Cooper, 512 Medical Arts Bldg., Oklahoma City, Director of Clinics.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Defillo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Cincinnati, Nov. 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Southwestern Medical Association, Albuquerque, New Mexico, Nov. 9-12. Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Texas, Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

WORLD WAR II HISTORIES OF MEDICAL UNITS

The Army Medical Library, Washington, D. C., is attempting to collect official and unofficial histories of medical units in the second world war. Frequently these works were in the nature of memorial or souvenir volumes written by the men of the unit, printed by a local printer in Germany, France, the Philippines or wherever the unit was at the close of the war and financed from the unit mess fund. Generally they were distributed only within the unit. Because of these unusual circumstances of publication, the books are most elusive. However, they are important historical records of the Medical Department and copies should be in the Army Medical Library where they will be catalogued and preserved. Information about such histories, or better yet the books themselves, will be most welcome.

169 CIVILIAN INTERNS COMMISSIONED

Commissions as first lieutenants in the Medical Corps Reserve have been given to 169 medical graduates who have been accepted for internship training in approved civilian hospitals, Major General Bliss, the Surgeon General, has announced. They have been called to active duty, with full pay and allowances of their grade, and will remain in the civilian hospitals for the completion of their internship.

With this group the Army Medical Department inaugurates the second year of civilian intern training under its Graduate Professional Training Program. Under the provisions of the Civilian Intern Training Program, a medical school graduate who has been accepted for internship by a civilian hospital approved by the Council on Hospitals and Medical Education of the American Medical Association may apply for a commission as first lieutenant in the Medical Corps Reserve. If accepted, he is called to duty and assigned in a training status at the civilian hospital of his choice. On completion of his internship, he serves two years for each year of training he has received as a Reserve officer. Another phase of the Graduate Professional Training Program is military intern training, in which selected medical graduates complete their internship in one of ten Army general hospitals approved for medical teaching.

Applications for either phase are invited from prospective graduates who will be not less than 21 nor more than 32 years old on the date their internship will begin, who are citizens of the United States with high moral character and who meet the physical requirements for a commission in the Regular Army.

Information can be had from any Army recruiting office or from The Chief, Personnel Division, Office of the Surgeon General, Department of the Army, Washington 25, D. C.

ADVANCED TRAINING IN CIVILIAN INSTITUTIONS

The following additional Medical Department officers have been accepted for advanced training in civilian institutions:

Col. Otto L. Churney, National Gastroenterological Association, New York, gastrointestinal surgery.

Col. Earl Maxwell, University of California Medical School, San Francisco, ophthalmology.

Col. Charles J. Farinacci, American Society of Clinical Pathologists, Indianapolis, pathology of infants.

Col. Herbert T. Berwald, University of Michigan, Ann Arbor, clinical exercises for practitioners.

Lieut. Col. Carl J. Lind Jr., American Society of Clinical Pathologists, Indianapolis, pathology of infants.

Lieut. Col. Albert E. Montgomery, University of Michigan, University Hospital, Ann Arbor, electrocardiographic diagnosis.

Lieut. Col. Emmett L. Kehoe, New York University, Post Graduate Medical School, New York, tropical medicine.

Lieut. Col. John W. Raulston, New York University, Post Graduate Medical School, New York, tropical medicine.

Major Arthur Steer, American Society of Clinical Pathologists, Indianapolis, pathology of infants.

Major Lorenze E. Zimmerman, American Society of Clinical Pathologists, Indianapolis, pathology of infants.

Major Charles W. Moulten, Wayne University, Detroit, obstetrics and gynecology.

Capt. James B. Hartney, American Society of Clinical Pathologists, Indianapolis, pathology of infants.

Capt. Ralph E. Brown Jr., Rhode Island Hospital, Providence, surgery.

Capt. Belle K. Cohen, Stanford University, Stanford, California, physical therapy.

First Lieut. Charles C. Pixley, Columbia University, New York, orthopedic surgery.

First Lieut. Richard C. Bodie, Cook County Hospital, Chicago, surgery.

AIR FORCE

WORLDWIDE EVACUATION BY AIR OF MILITARY PATIENTS

Worldwide air transportation of military medical patients, now carried largely by hospital ships and trains, was taken over October 1 by the Military Air Transport Service. The decision to switch to air evacuation of the sick and wounded of the three armed services was based on recommendations made by the joint chiefs of staff, the director of Medical Services, Department of Defense and the surgeons general of the Army, Navy and Air Force.

Evacuation by air of patients overseas will remove from service two war-famous hospital ships, the United States Army Transport *Comfort* and the United States Army Transport *Hope*. Also taken out of service by the new order will be the hospital train which has been used in the United States to distribute patients to government hospitals.

Trans-Atlantic air evacuation flights will be more than doubled during October, to provide the three hundred spaces allocated to patients from the European Command. The new schedule includes ten round trips monthly instead of the current four round trips.

During October the 300 mainland-bound patients from the European theater will be flown in C-54 aircraft, which have been used since wartime for long distance air evacuation, and the newer C-121's with pressurized cabins. During the month of November, C-121 flights will be increased in the Atlantic Division for both patients and passengers.

A study of air evacuation for the joint chiefs of staff revealed that 21 times more medical personnel are required for evacuation by surface vessel than for evacuation by air. For an average 10,000 nautical-mile trip, a Military Sea Transport Service (MSTS) hospital ship carrying 300 patients and manned by 126 Medical Corps personnel, including eight doctors, requires forty-five days for a round trip, according to the study. A Military Air Transport Service C-54 air evacuation aircraft carrying 34 patients and manned by 3 attendants (1 nurse and 2 medical corpsmen) requires ten days to make the same trip. A flight surgeon flies with patients whose condition indicates a need for a surgeon.

In addition to the saving in personnel, patients returned to the United States by aircraft can begin specialized treatment from thirty to ninety days ahead of those transported by hospital ship, with consequent earlier recovery and return to duty. In rare cases where air evacuation is "medically contraindicated" the patients returning from overseas will be moved in the sick bays of Military Sea Transport Service troop transports and within the United States by ambulance or train.

Total medical evacuation by air is already a reality in the Alaskan and Caribbean theaters. The average patient load from the Caribbean is 30 per month and 50 from Alaska. Present commitments from the Pacific theater is 240 a month with a projected load of 500, while the Atlantic Division patient traffic will be increased from 135 to 300 for October.

When the system becomes operative, all patients to be flown to the United States will be sent to the Air Force 495th Medical Group Hospital at Wiesbaden, Germany, which has been designated the European Command Air Evacuation Holding Hospital. Military Air Transport Service aircraft will continue to use the Rhein-Main base in Germany as an operational base but will use Wiesbaden, within 4 miles of the hospital, as the loading point for returning patients. Fairfield-Suisun Air Force Base, Fairfield, Calif., is the mainland terminus for Military Air Transport Service Pacific Division flights and Westover Air Force Base, Chicopee Falls, Mass., for the Atlantic Division.

Although Military Air Transport Service was not formed until July 1948, the Air Force component of this integrated service, the Air Transport Command, began carrying patients from forward areas to mainland hospitals during the early phases of World War II and in the four years of 1942 to 1945, inclusive, evacuated 1,335,000 patients by air (including intratheater as well as transoceanic flights), flying a total of 953,000,000 patient miles.

Naval Air Transport Service, which was integrated with Air Transport Command to form Military Air Transport Service, likewise had war-time experience in air evacuation from combat areas. Naval Air Transport Service evacuated 86,000 patients from 1942 to 1945 in nearly 6,000 flights. Marine Corps aircraft added another 16,000 patients to that total.

While the Military Air Transport Service has developed air evacuation to its present high degree, the Army was the pioneer in this field. The first recommendation for use of aircraft in the transportation of patients was made by Capt. George H. R. Gosman (MC) to the Surgeon General of the Army in 1910.

PUBLIC HEALTH SERVICE

FORTY MILLION DOLLAR CLINICAL CENTER

The clinical center being built for the National Institutes of Health at Bethesda, Md., will be a combined hospital and research institution, and according to Oscar Ewing, Federal Security Administrator, will house one of the best equipped medical and basic science laboratories ever built, together with hospital facilities for 500 patients. The fourteen story, $40,000,000, air-conditioned building is scheduled for completion by July 1952. Planning for the clinical center was assigned to a special committee which visited a large number of new hospitals and medical science laboratories throughout the United States. Surgeon General Leonard A. Scheele of the Public Health Service said that because of the painstaking care necessary before a new treatment is given to patients, and owing to the need for elaborate studies during treatment, laboratory space will be twice that assigned to patients. Working with the planning committee was a staff of experts under Dr. Jack Masur, director of the center, and architects of the Public Buildings Administration, General Services Administration, under Commissioner W. E. Reynolds. Patients will be selected from all parts of the country according to the nature of their illness. Only patients with the particular disease under study at the center can be accepted. A 500 seat scientific auditorium will be equipped with television, and a few seats will be specially wired for the hard of hearing. There will be an eight room surgical suite, and all anesthesia will be done by physicians. Dr. R. E. Dyer, director of the National Institutes of Health, will supervise the over-all operation of the center. Dr. Norman H. Topping, associate director of the National Institutes of Health, said that the government already has "colonies" of trainees for the center established throughout the country who are being recruited and trained for the particular type of research desired. Dr. Scheele said, "This is to be a research center, not an institution in competition with private physicians and private hospitals." There will be intimate collaboration between medical schools and the center. Richard Morris wrote in *The Washington Post*, September 4, that this is one of the reasons why officials at the National Institutes of Health believe that Washington will become the medical capital of the world. Additional details concerning the center were published in THE JOURNAL, September 24, page 271.

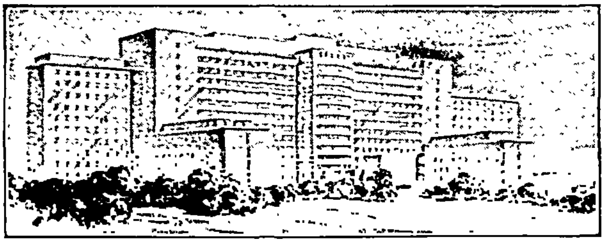

Fig. 1.—Clinical Center, National Institutes of Health, Bethesda, Md.

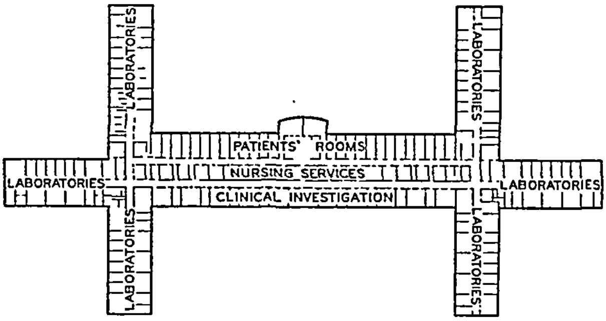

Fig. 2.—Typical floor plan of the clinical center.

MISCELLANEOUS

REPORT ON VOCATIONAL REHABILITATION

The annual report of the Office of Vocational Rehabilitation states that the fiscal year 1948 wound up the first five year period under strengthened legislation with a record of 219,000 rehabilitations as against 210,000 in the preceding twenty-three years under limited legislative authority. Rehabilitating disabled civilians into suitable employment reached its highest peak during 1948 with 53,000 handicapped men and women returned to economic independence.

The annual rate of earnings for the group rehabilitated in 1948 is estimated at $86 million in contrast to $17 million before rehabilitation. Only 23 per cent of the rehabilitants were working at the time they began receiving rehabilitation services, and they were in jobs that generally were hazardous to their health and safety or to the health and safety of others. The report stated that the average rehabilitant will repay, in federal income taxes alone, $10 for every federal dollar spent in his rehabilitation if he is employed only 85 per cent of full time during the rest of his working life.

The report emphasizes that the state-federal system provides virtually every service necessary to convert the disabled dependent into a wage-earning, self-supporting citizen. Medical, surgical, psychiatric and hospital services are provided to effect his physical restoration. Counsel and guidance are given in order that he may select the job for which he is best fitted. Training on the job, in schools, colleges or trade schools or even through tutors or correspondence schools is given to prepare him to do the right job well. A job is then found for him, and his progress is followed up to the point where both he and his employer are satisfied.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Study of Food Factors in Plants.—The U. S. Public Health Service has given a grant of $2,916 to Daniel I. Arnon, Ph.D., associate professor of plant nutrition, University of California, Berkeley, as part of a program to support research that will provide a better understanding of "those forces in nature that can be used to improve health and food production."

Prize Essay.—The Los Angeles Heart Association has selected a paper submitted by Marvin J. Rosenburg, Los Angeles, entitled "Position of Precordial Leads; An Anatomic Study," as the prize essay of the year. The award consists of $100 and the opportunity to present the paper at the fall symposium of the Los Angeles Heart Association, October 18-19. Dr. Rosenburg is a graduate of the University of California Medical School, Berkeley-San Francisco, 1943.

COLORADO

Course in Anesthesiology.—A postgraduate course on the principles of inhalation anesthesiology will be given at the University of Colorado School of Medicine, Denver, November 18-19. The course, which is organized by both doctors of medicine and dentistry, comprises instruction in the principles and technics of inhalation anesthesia with practical application and demonstrations. A registration fee of $10 will be charged. Inquiries may be addressed to the Office of Director of Graduate and Postgraduate Medical Education, 4200 East Ninth Avenue, Denver 7.

ILLINOIS

Centralia Emergency Polio Center.—During the current season of poliomyelitis, the state department of public health, the National Foundation for Infantile Paralysis and the city officials of Centralia decided to underwrite the opening of an emergency center for the care of poliomyelitis patients in the Centralia area. The services of consultants from Northwestern University were obtained. The Northwestern team consisted of Drs. Jack M. Markovitz, pediatrician; Howard W. Schneider, orthopedic surgeon, and Kurt Glaser, pediatrician. From July 19 to the time the center closed, September 10, 237 persons suspected of having poliomyelitis were examined; the disease was diagnosed in 148, who were admitted to the center. The peak load at any time was 42 patients. Centralia community citizens and voluntary and official agencies contributed time and effort to care for the patients.

Chicago

Loeffler Memorial Foundation.—The Hektoen Institute for Medical Research of the Cook County Hospital has allocated $5,000 of its funds for the creation of a Dr. Ernst Loeffler Memorial Foundation to support research in honor of the recently deceased research associate of the institute.

Forty Lectures for General Practitioners.—South-side Chicago practitioners will sponsor a "back-to-school" movement to study current trends in medicine in a series of 40 lectures to be presented under the joint auspices of the south-side regional chapter of the American Academy of General Practice and the University of Chicago School of Medicine. Beginning November 2, classes will be held weekly on Wednesdays at 8:30 p. m. Forty of the University of Chicago's 375 full time staff of physicians will lecture. Among the lecturers scheduled for early sessions of the course will be: Drs. Wright Adams, Emmet B. Bay, Alf Alving and Leon O. Jacobson from the department of medicine; Drs. Dallas B. Phemister, Lester R. Dragstedt, William E. Adams, Dwight E. Clark and J. Garrott Allen from the department of surgery, and Albert L. Lehninger, Ph.D., of the department of biochemistry. The course is designed to present basic scientific information as supplied to the clinical field. Special emphasis will be given to radioactive isotopes, postoperative care, antibiotics and other medical developments.

Dr. Roscoe Miller Becomes President of Northwestern University.—About 2,500 persons attended the ceremonial inauguration on October 6, on the Evanston campus of Dr. J. Roscoe Miller as the twelfth president of Northwestern University. After the induction ceremonies, the honorary degree of doctor of laws was conferred on Dr. Miller by his predecessor, president emeritus Franklyn Snyder. Dr. Harold Dodds, president of Princeton University, presented an address at the inaugural banquet. Dr. Miller joined the faculty at Northwestern 19 years ago and was dean of the Medical School from 1941 until he became president of the University. He is a native of Utah, was dean and associate professor of medicine at Northwestern and last year was president of the Chicago Medical Society. In his inaugural address, Dr. Miller said, "The human mind is a greater power by far than the atom bomb, and a power we need not fear when it operates in a climate of freedom. We have everything to fear," he said, "when the human mind is curbed and perverted." He called on higher education to develop enlightened intellect, broad human sympathies and responsible character. "The indispensable condition for this job," he said, "is freedom." "We must continue to maintain universities that can resist political pressure or pressure from organized groups or vested interests."

MARYLAND

Fourth Friedenwald Memorial Lecture.—The fourth Julius Friedenwald Memorial Lecture of the University of Maryland will be delivered by Dr. Henry L. Bockus, professor of gastroenterology, University of Pennsylvania Graduate School of Medicine, Philadelphia, on October 27. He will speak on "Acute Pancreatitis." The lectureship was established in 1941 in honor of Dr. Friedenwald, formerly professor of gastroenterology.

State Society Meeting.—The Medical and Chirurgical Faculty of the State of Maryland met in Chestertown, Kent County, October 20. Dr. Jacob E. Finesinger, assistant professor of psychiatry, Harvard Medical School, Boston, and professor-elect of psychiatry, University of Maryland School of Medicine, Baltimore, spoke on "An Operational Approach to the Doctor-Patient Relationship." A tea and cocktail party and a golf tournament were held at the Chester River Yacht Country Club.

NEW YORK

Society News.—The New York Institute of Clinical Oral Pathology will hold its monthly conference October 31 at the New York Academy of Medicine at 9 p. m. Dr. Henry D. Diamond, New York, will read a paper entitled "The Significance of Enlarged Cervical Lymph Nodes."——The Medical Society of the State of New York with the cooperation of the New York State Department of Health has arranged postgraduate instruction for the Cayuga County Medical Society, October 27 at 8 p. m. at the Springside Inn, Auburn. Dr. Joseph D. Godfrey, Buffalo, will speak on "The Treatment of Low Back Pain."

Postgraduate Training in Anesthesiology.—The New York State Society of Anesthesiologists, in cooperation with the American Society of Anesthesiologists, is offering postgraduate training in anesthesiology to any physician in this state who is engaged in full or part time practice of anesthesiology. Instruction is individualized and informal and will cover fundamental aspects of clinical practice. Training will be given in or close to the applicant's own community on a flexible time schedule. There is no tuition fee. Interested physicians may write to S. G. Hershey, New York State Society of Anesthesiologists, 745 Fifth Avenue, New York.

New York City

Discussion of Pulmonary Diseases.—The Tuberculosis Sanatorium Conference of Metropolitan New York held a clinical session October 19 in the Cornell University Medical College Amphitheatre. The program was a panel discussion on "The Heart in Relation to Chronic Pulmonary Disease."

The First Harvey Lecture.—Dr. Herman M. Kalckar, research professor, Institute for Medical Physiology, University of Copenhagen, Denmark, will deliver the first Harvey Lecture of the current series at the New York Academy of Medicine on Oct. 27, 1949. Dr. Kalckar will speak on "Enzymatic Reactions in Purine Metabolism."

The Annual Salmon Lectures.—Dr. Stanley Cobb will deliver the annual Salmon Memorial Lectures on November 8, 9 and 10 at 8:30 p.m. at the New York Academy of Medicine, on "Emotions and Clinical Medicine." Dr. Cobb has served on the faculty of the Harvard Medical School, Boston, since 1919, and as Bullard Professor of Neuropathology since 1926. He has been president of the American Neurological Association and is a member of the Harvard Epilepsy Commission, the American Psychiatric Association, Association for Research in Nervous and Mental Disease, Association of American Physicians and many other societies.

PENNSYLVANIA

State Medical Election.—At the annual meeting of the House of Delegates of the Medical Society of the State of Pennsylvania, held on September 28 in Pittsburgh, the following officers were elected: Drs. E. Roger Samuel, Mt. Carmel, president; Harold B. Gardner, Pittsburgh, president-elect, and Walter F. Donaldson, Pittsburgh secretary-treasurer.

Public Health Appointment.—Dr. Gouverneur V. Emerson, Milford, former Brigadier General in the U. S. Army Medical Corps, has been appointed supervising physician in the Bureau of Tuberculosis Control, State Department of Health at Harrisburg. Dr. Emerson is a graduate of the Medico-Chirurgical College of Philadelphia, 1914.

Philadelphia

Appointments and Promotions.—Dr. Joseph H. Boutwell Jr. has been appointed assistant professor of physiologic chemistry and M. Noble Bates, Ph.D., assistant professor of chemistry on the staff of the Temple University School of Medicine. Dr. Boutwell is a graduate of Northwestern University School of Medicine, 1949. Dr. Bates received his Ph.D. degree from Cornell University. The following instructors have been appointed: Dr. Charles R. Shuman, internal medicine; Dr. Richard W. Sonntag, ophthalmology; Dr. William N. Campbell, pathology; Dr. Hadwin K. Fischer and Dr. Stuart M. Finch, psychiatry; Dr. Charles W. Umlauf, neurology, and Dr. John B. Roxby Jr., assistant instructor in dermatology. The following physicians have been promoted: Louis Cohen, to associate professor of internal medicine; Robison D. Harley, to assistant professor of ophthalmology; William M. Hart, to assistant professor of research ophthalmology; Louis F. Hinman, to associate of ophthalmology, and Meyer L. Niedelman, to associate in dermatology.

SOUTH CAROLINA

Annual Postgraduate Seminar.—The eighth annual alumni postgraduate seminar will be held in the Baruch Auditorium, Medical College of the State of South Carolina, on November 3-4. The program includes the following speakers:

Richard H. Lyons, Syracuse, N. Y., Pathogenesis of Heart Failure and Its Treatment.
J. Englebert-Dunphy, Boston, Treatment of Massive Upper Gastrointestinal Bleeding.
James F. Norton, Jersey City, N. J., Management of Pregnancy with Emphasis on Early Recognition of Toxemia.
Francis F. Schwentker, Baltimore, Treatment of Pneumonia in Children.
Earle M. Chapman, Boston, Thyroid Diseases.
Howard Ulfelder, Boston, Critical Review of Exfoliative Cytology as Applied in the Diagnosis of Malignant Diseases.
Lloyd G. Lewis, Washington, D. C., Cancer of the Genitourinary Tract.
T. Nelson Carey, Baltimore, Diabetes.

TEXAS

Pediatrics Conference at Galveston.—The twelfth pediatric Postgraduate Conference will be held at the University of Texas Medical Branch, Galveston, November 7-12, under the auspices of the University of Texas Child Health Program in cooperation with the Maternal and Child Health Division, Texas State Board of Health. Guest speakers include:

Stuart S. Stevenson, Pittsburgh, Care of the Newborn.
James G. Hughes, Memphis, Tenn., Pertinent Points in Premature Management.
Oswald S. Wyatt, Minneapolis, Surgical Emergencies During Infancy.
Douglas N. Buchanan, Chicago, Problems in Diagnosis of Neurosurgical Disorders in Children.
Angus M. McBryde, Durham, N. C., Office and Hospital Management of Diarrhea in Infants.
Joseph Stokes Jr., Philadelphia, The Encephalitides—Their Diagnosis and Management.

Physicians of Texas may request special allowance for per diem, travel and tuition. A limited number of physicians will be accepted. Application blanks may be secured by writing to Dr. Arild F. Hansen, Director, University of Texas Child Health Program, Galveston.

Post Graduate Medical Assembly of South Texas.—This organization will hold its fifteenth annual meeting November 20-December 1 at the Shamrock Hotel, Houston. Guest speakers include: Drs. Carl E. Badgley, Ann Arbor, Mich.; Edward D. Churchill, Boston; Louis H. Clerf, Philadelphia; Lewis Dexter, Boston; R. Gordon Douglas, New York; Michael H. Ebert, Chicago; F. Bruce Fralick, Ann Arbor, Mich.; Lot D. Howard Jr., San Francisco; Reed M. Nesbit, Ann Arbor, Mich.; Emil Novak, Baltimore; Ralph V. Platou, New Orleans; Isidor S. Ravdin, Philadelphia; Edmund B. Spaeth, Philadelphia; Lloyd J. Thompson, Winston-Salem, N. C., and Paul D. White, Boston. Registration fee is $20. Checks may be mailed in advance to the Assembly Office, 229 Medical Arts Building, Houston.

WASHINGTON

University Mobile Laboratory.—The University of Washington Medical School's department of public health and preventive medicine has a mobile laboratory which can be rushed to any part of the state for epidemic control or for use in field research. It was used first in Yakima Valley for a follow-up research study of encephalitis which began August 1. The research was a joint investigation of the Hooper Foundation and the University of California, San Francisco, Washington University School of Medicine, Seattle, and the Washington State Department of Health. Materials collected will be studied in detail later at the medical school. The laboratory, reportedly one of the few of its kind in the nation, was converted from a surplus army ambulance.

State Society Honors Dr. Worcester.—A plaque was erected September 12 in the Health Sciences Building of the University of Washington by the Washington State Medical Association honoring Dr. John L. Worcester, University of Washington anatomy professor who died in 1947, and the university has designated the anatomy department facilities as the Worcester Memorial Laboratories. Dr. Worcester came to the university in 1917 to organize a medical school. When World War I intervened, plans for the school were dropped. Dr. Worcester remained on the faculty as professor of anatomy until his death. He was known for three decades on the campus as the "godfather of pre-medics." The plaque was presented to Dr. H. Stanley Bennett, head of the anatomy department, by Dr. Marion M. Kalez of Spokane, representing the state medical association.

WYOMING

State Medical Election.—The Wyoming State Medical Society at its meeting in September elected the following officers for the coming year: Dr. DeWitt Dominick, Cody, president; Dr. Karl E. Krueger, Rock Springs, president-elect; Dr. Paul R. Holtz, Lander, vice president; Dr. George H. Phelps, Cheyenne, secretary; Dr. E. Earl Whedon, Sheridan, editor, *Rocky Mountain Medical Journal,* and Arthur R. Abbey, Cheyenne, executive secretary.

ALASKA

Survey of Mental Health.—A federal government investigative team has been studying Alaska's mental health conditions by visiting communities to gather first hand information. Dr. Winfred Overholser, Washington, D. C., headed the group, consisting of Dr. Dale C. Cameron, Washington, D. C.; M. W. Goding, and Seymour Littman. Local members of the group were Drs. James Googe, Juneau, medical director of the Alaska Native Service, and C. Earl Albrecht, Juneau, commissioner of health. The survey will result in a long range program to provide treatment for Alaskan mental patients in line with modern psychiatric and medical practice.

GENERAL

American Clinical and Climatological Association.—This organization will hold its sixty-second annual meeting at the Greenbrier, White Sulphur Springs, W. Va., October 27-29, under the presidency of Dr. Maurice C. Pincoffs, Baltimore. Among many scientific papers to be presented will be the Gordon Wilson Lecture: "The Changing Status of the Rickettsioses," by Dr. Joseph E. Smadel, of the Army Medical Department of Research and Graduate School, Washington, D. C. Following the business meeting Thursday afternoon will be a cocktail party, dinner and dancing for members and their wives.

American Society of Tropical Medicine.—This organization will hold its forty-fifth annual meeting at the Peabody Hotel, Memphis, Tenn., November 6-9, under the presidency of Dr. Norman H. Topping, Bethesda, Md. Among the numerous papers to be presented will be the fourteenth annual Charles F. Craig Lecture, to be delivered by Dr. Joseph E. Smadel, Army Medical Department, Research and Graduate School, Washington, D. C., on "Antibiotics in Typhus and Typhoid Fever." The Bailey K. Ashford Award will be presented at the Monday afternoon regular session.

New Genetics Journal.—The American Society of Human Genetics, organized about a year ago, will start to publish in October *The American Journal of Human Genetics,* pertaining to research in the subject. It will appear in annual volumes of four issues each. The price of the journal is $8 per volume. The editor is Charles W. Cotterman, Ph.D., Heredity Clinic, University of Michigan, Ann Arbor, to whom manuscripts should be sent for consideration. Subscriptions to the journal should be addressed to the secretary of the society, Herluf H. Strandskov, Ph.D., department of zoology, University of Chicago, Chicago 37. Checks should be made payable to the American Society of Human Genetics.

Society for Crippled Children.—The annual convention of the National Society for Crippled Children and Adults will be held at the Commodore Hotel, New York, November 7-10, with John J. Lee, Ph.D., president of the society and dean of the graduate school at Wayne University College of Medicine, Detroit, Mich., presiding. Among the speakers included in the program are: Drs. Anton J. Carlson, Chicago; George G. Deaver, New York; Leslie B. Hohman, Durham, N. C.; Frank H. Krusen, Rochester, Minn.; George F. Lull, Chicago; William C. Menninger, Topeka, Kan.; Meyer A. Perlstein, Chicago, and Howard A. Rusk, New York.

Urology Award.—The American Urological Association offers an annual award of $1,000 (first prize $500, second prize $300 and a third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition will be limited to urologists who have been in such practice for not more than five years and to residents in urology in recognized hospitals. The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association to be held at the Hotel Statler, Washington, D. C., May 29-June 1, 1950. For details write the secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, N. J. Essays must be in his hands before Feb. 20, 1950.

Scholarship Grant for Cerebral Palsy Study.—Alpha Chi Omega, women's fraternity, has made an additional grant of $10,000 to the National Society for Crippled Children and Adults, to continue a jointly sponsored scholarship program for training professional personnel to work with victims of cerebral palsy. The $10,000 is in addition to the $15,000 already granted. Since the first awards were made in 1948, more than twenty-five scholarship grants have been provided to qualified physicians, therapists and other specialists. When they complete their scholarship study, these professional workers assist the National Society's 2,000 state and local units throughout the United States, Hawaii and Alaska, as well as other public and private agencies.

New Heart Association Publication.—Approximately $700,000 has been allocated for heart research this year by the American Heart Association and its affiliates, according to *The American Heart,* quarterly publication of the association, in its September issue. Research awards from the national office totaled $250,000 in 1949, while research funds spent by affiliates include $213,000 distributed by the New York Heart Association (New York City) and $144,000 by the Chicago Heart Association. The American Heart Association's own allocations this year were from funds raised during its 1948 campaign; a minimum of $380,000 from 1949 campaign funds has already been ear-marked for future research awards. The quarterly journal appears in its inaugural issue, an eight page, letter-size, illustrated publication. The first issue of 30,000 copies will go to the association's 8,000 members and for additional public distribution by more than forty affiliated heart associations across the country.

American Academy of Pediatrics. — This organization will hold its eighteenth annual meeting at the Palace Hotel, San Francisco, November 14-17, under the presidency of Dr. Warren R. Sisson, Boston. Out of state speakers include:

Meyer A. Perlstein, Chicago, New Drugs in the Treatment of Epilepsy.
Harold B. Levy, Clarence H. Webb and Jacques D. Wilkinson, Shreveport, La., Tularemia as a Pediatric Problem.
William E. Ladd and Orvar Swenson, Boston, Congenital Anomalies of the Esophagus.
Harold W. Dargeon, New York, The Effects of Antifold Compounds on Certain Childhood Cancers.
Sophie Spitz, New York, The Disparity Between Clinical Behavior and Histologic Appearance of Cutaneous Tumors of Childhood.
Edward B. D. Neuhauser, Boston, The Diagnosis and Rationale of Treatment of Neuroblastoma and Embryoma.
Clarence G. Peterson, Portland, Ore., Tumors of Childhood: Surgeon's Viewpoint.
Winthrop M. Phelps, Baltimore, Present Status of the Care of Cerebral Palsy.
Ralph H. Kunstadter, Chicago, The Treatment of Thyrotoxicosis in Children with Thiourea Derivatives.
Thaddeus S. Danowski, Pittsburgh, Potassium Studies in Pediatric Disease.
Harry R. Litchfield, Robert J. Norton, Armand H. Moss and Irving Greenblatt, Ph.D., Brooklyn, The Evaluation of Serum Albumin, Sodium and Potassium Salts and Other Methods of Treatment in Nephroses.
John A. Toomey, Cleveland, Is Weeks' Virus Due to Poliomyelitis?
Alfred D. Biggs, Chicago, The Primary Tuberculosis Complex.

Panel and round table discussions will be held November 14-17, and a symposium will be held November 17 at 8 a. m. on "Congenital Anomalies." The registration fee, which includes banquet and luncheon tickets, is $10 for members and $15 for nonmembers.

Meeting on Arteriosclerosis and Geriatrics.—The American Society for the Study of Arteriosclerosis will hold its annual meeting at the Hotel Knickerbocker, Chicago, November 6-7 under the presidency of Dr. Irvine H. Page, Cleveland. Numerous scientific discussions will be presented by physicians throughout the country. Dr. Page will preside at the opening meeting and other chairmen will be Drs. E. Cowles Andrus, Baltimore; G. Lyman Duff, Montreal, Canada, and Louis N. Katz, Chicago. The Gerontological Society will also meet at the Hotel Knickerbocker, November 5-6. At the Saturday afternoon session of the society there will be a symposium on nutrition with Dr. Edward J. Stieglitz, Washington, D. C., as chairman.

The societies will join in a banquet Sunday night at 7:30. The guest speaker will be Dr. Alan R. Moritz, newly appointed professor of pathology, Western Reserve University School of Medicine, Cleveland.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

	Week Ended			Jan. 1 to	
Division and State	Oct. 8, 1949	Oct. 9, 1948	Median, 1944-1948	Oct. 8, 1949	Oct. 9, 1948
New England States					
Maine	12	2	2	411	36
New Hampshire	1	..	2	177	18
Vermont	3	1*	2	110	20*
Massachusetts	93	11	29	1,559	102
Rhode Island	10	1	1	128	7
Connecticut	43	7	7	505	97
Middle Atlantic States					
New York	222	92	92	4,600	1,145
New Jersey	85	41	33	1,176	616
Pennsylvania	32	33	33	626	582
East North Central States					
Ohio	59	62	62	1,505	970
Indiana	62	12	12	954	328
Illinois	71	70	60	2,510	877
	92†	35	35	2,378†	547
	61	35	35	878	403
West North Central States					
Minnesota	86	86	40	1,653	947
Iowa	37	64	24	969	835
Missouri	42	14	12	1,176	255
North Dakota	8	9	2	428	106
South Dakota	9	58	3	323	281
Nebraska	31	53	10	524	580
Kansas	23	18	5	621	201
South Atlantic States					
Delaware	..	3	2	38	122
Maryland	10†	12	12	184†	79
District of Columbia	4	6	5	82	105
Virginia	12	17	14	275	469
West Virginia	11	7	7	310	135
North Carolina	6	47	12	200	2,288
South Carolina	3	8	3	94	330
Georgia	16	6*	5	176	197*
Florida	10	7	5	212	223
East South Central States					
Kentucky	28	14	8	534	172
Tennessee	19	12	11	452	319
Alabama	8	7	3	212	183
Mississippi	17	2	3	296	139
West South Central States					
Arkansas	24†	3	3	895†	126
Louisiana	3	9	6	204	125
Oklahoma	43	9	2	1,133	330
Texas	52	30	20	1,995	1,520
Mountain States					
Montana	1	4	4	76	55
Idaho	20	3	2	296	97
Wyoming	4	1	1	101	68
Colorado	23	1	4	551	96
New Mexico	13	4	2	162	65
Arizona	8	7	2	141	118
Utah	12	8	6	196	74
Nevada	2	..	..	13	4
Pacific States					
Washington	24	25	18	485	233
Oregon	23	8	7	203	124
California	110	223	43	1,915	3,512
Total	1,588	1,207*	...	34,742	20,381*
Median, 1944-1948			877	15,423	

* Figures changed by corrected reports.

† Current corrections and cumulative totals: deduct, Michigan 1 case week ended Aug. 13 and 2 cases week ended September 3; additions, Maryland 3 cases August onset and 9 cases September onset; Arkansas 1 case week ended Oct. 1.

Marriages

John P Docktor, Ellsworth, Pa., to Miss Patricia Anne McCue of Woodside, L. I., N. Y., in New York, July 30.

Laurie Craig Dickson Jr., Charlotte, N. C., to Dr. Mary Dykema Ely at Grosse Pointe, Mich., July 25.

Charles Michael Van Duyne, Pontiac, Ill., to Miss Anna Christine Pearce of San Francisco, recently.

Robert Paul Dobbie Jr., Buffalo, N. Y., to Miss Barbara Louise Smith at Ann Arbor, Mich., July 2.

Deaths

Bruce Hutchinson Douglas ⊕ since 1941 commissioner of health of Detroit; born in Des Moines, Iowa, Aug. 26, 1892; Rush Medical College, Chicago, 1921; chairman, department of preventive medicine and public health and professor at the Wayne University College of Medicine; lecturer in public health practice and epidemiology, University of Michigan School of Public Health in Ann Arbor; specialist certified by the American Board of Internal Medicine; fellow of the American Public Health Association and the American College of Physicians; member and past president of the National Tuberculosis Association, Michigan Tuberculosis Association, Mississippi Valley Conference on Tuberculosis, American Sanatorium Association and the Michigan Trudeau Society; member of the American Association for the Advancement of Science and the International Union Against Tuberculosis; consultant, tuberculosis service, and at one time acting superintendent of the Herman Kiefer Hospital and tuberculosis controller for the city department of health: served as a member of the committee on tuberculosis of the National Research Council; in 1922-1923 assistant medical director, medical director, 1923-1924, and superintendent from 1924 to 1933 of the Maybury Sanatorium in Northville, Mich., where he was a consultant; consultant, tuberculosis division, U. S. Public Health Service; served on the editorial board of *American Review of Tuberculosis;* author of a chapter on tuberculosis in Top's "Handbook of Communicable Diseases"; for his work in fighting tuberculosis he was made the posthumous recipient of the Knight of Crusade award, presented by the Tuberculosis and Health Society; killed August 11, aged 56, in an automobile accident.

Edward Waldemar Anderson, Des Moines; born in Marion, Iowa, Nov. 11, 1898; State University of Iowa College of Medicine, Iowa City, 1923; member of the American Medical Association; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; fellow in medicine at the Mayo Foundation in Rochester, Minn., from Jan. 1, 1925 to August 1930; formerly instructor in medicine at the Dartmouth Medical School, Hanover, N. H., where he had been an internist at the Hitchcock Clinic; served on the staffs of the Broadlawns Hospital and the Iowa Methodist Hospital, where he died September 5, aged 50, of cerebral hemorrhage.

Benjamin Ward Baker ⊕ San Antonio, Texas; born in New Boston, N. H., Aug. 6, 1874; Dartmouth Medical School, Hanover, N. H., 1898; member of the New Hampshire Medical Society, American Psychiatric Association and the New England Society of Psychiatry; member and past president and secretary of the American Association for the Study of Mental Deficiency; for many years assistant physician and assistant superintendent of the Taunton (Mass.) State Hospital; formerly superintendent of the Laconia (N. H.) State School; died August 17, aged 75, of coronary occlusion.

Samuel Harold Gray ⊕ St. Louis; Columbia University College of Physicians and Surgeons, New York, 1923; associate professor of pathology at Washington University School of Medicine; specialist certified by the American Board of Pathology; member of the American Association of Pathologists and Bacteriologists, College of American Pathologists, American Society for Experimental Pathology and the American Society of Clinical Pathologists; served during World War II; affiliated with the Jewish Hospital; died in Cameron, Wis., August 18, aged 52.

Stanley W. Insley ⊕ Detroit; Detroit College of Medicine and Surgery, 1922; assistant professor of clinical medicine at his alma mater, now known as the Wayne University College of Medicine; past president and secretary of the Wayne County Medical Society; member of the American Association for the Study of Allergy; past president of the Michigan Allergy Society; served as editor of the *Detroit Medical News;* affiliated with St. Mary's Hospital, Mount Carmel Hospital and the Providence Hospital, where he died August 9, aged 50.

William Ross Rosanoff, Alhambra, Calif.; University of California Medical School, San Francisco, 1940; assistant clinical professor of nervous diseases at the College of Medical Evangelists in Los Angeles; member of the American Psychiatric Association and the American Medical Association; specialist certified by the American Board of Psychiatry and Neurology; senior assistant surgeon in the U. S. Public Health Service from 1942 to 1946; affiliated with the Alhambra Sanatorium in Rosemead; died August 17, aged 33, of injuries received in an automobile accident.

Thomas Francis Clark ⊕ Taunton, Mass.; Harvard Medical School, Boston, 1901; died July 24, aged 81.

Charles C. Cook, Baltimore; University of Maryland School of Medicine, Baltimore, 1901; died in the University Hospital July 6, aged 84, of cerebrovascular accident.

Samuel Einterz, New York; University and Bellevue Hospital Medical College, New York, 1913; member of the American Medical Association; died in Peekskill, N. Y., August 25, aged 60.

O. Charles Ericksen ⊕ Sioux Falls, S. D.; Rush Medical College, Chicago, 1921; fellow of the American College of Surgeons; affiliated with Sioux Valley and McKennan hospitals; died July 30, aged 52.

Herbert Clifford Fulmer, Thousand Island Park, N. Y.; Syracuse University College of Medicine, 1916; died recently, aged 55, of cardiac asthma.

Ernest Lester Gates, Greenville, Ky.; Hospital College of Medicine, Louisville, 1903; member of the American Medical Association; served as a member of the state board of health; died recently, aged 70.

Charles William Gerber ⊕ Las Cruces, N. Mex.; Denver College of Medicine, 1899; past president of the New Mexico Medical Society; fellow of the American Public Health Association; for many years district health officer; died July 30, aged 72, of chronic myocarditis, bronchiectasis and pulmonary emphysema.

Leonard Andrew Glover ⊕ Wichita, Falls, Texas; Baylor University College of Medicine, Dallas, 1931; member of the Radiological Society of North America; affiliated with the Bethania Hospital and Wichita General Hospital, where he died July 21, aged 47.

Emmett Frank Guy, Milwaukee; Northwestern University Medical School, Chicago, 1927; member of the American Medical Association; affiliated with St. Mary's Hospital; died recently, aged 47, of coronary occlusion.

Edmond Chaille Hancock, Arlington, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1917; member of the American Medical Association; died in Fort Worth recently, aged 56, of hypertension and cerebral hemorrhage.

Robert Alexander Hardie, Lansing, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1890; for many years a medical missionary in Seoul, Korea; died recently, aged 84, of arteriosclerosis.

Edward D. Havens, Cicero, Ind.; Medical College of Indiana, Indianapolis, 1903; served during World War I; died recently, aged 73, as the result of a fall.

Taylor August Mast, Chireno, Texas; Barnes Medical College, St. Louis, 1897; affiliated with the City Memorial Hospital, Nacogdoches; died July 14, aged 79, of cerebral hemorrhage.

Jesse B. Mossman, Camarillo, Calif.; Northwestern University Medical School, Chicago, 1925; affiliated with the Camarillo State Hospital; died recently, aged 56, of coronary heart disease.

Joseph Neff, Los Angeles; Medico-Chirurgical College of Philadelphia, 1899; died August 17, aged 78.

Thomas Canfield Pounds, Tegucigalpa, Honduras, Central America; University of Southern California College of Medicine, Los Angeles, 1903; served during World War I; died July 28, aged 71.

Arthur Lincoln Reagh, Boston; Harvard Medical School, Boston, 1898; member of the American Medical Association; died in the City Hospital recently, aged 77.

Henry Oliver Schaleben, Edinburg, Texas; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; member of the American Medical Association; died recently, aged 67, of carcinoma of the stomach.

Adam E. Smith, White Plains, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1895; formerly on the faculty of his alma mater; died July 26, aged 75, of arteriosclerosis and paraplegia.

Pier Giuseppe Spinelli, New York; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1898; died in the Mother Cabrini Hospital recently, aged 76, of acute cardiac dilatation, following a prostatectomy.

⊕ Indicates "Fellow" of the American Medical Association.

Foreign Letters

AUSTRALIA

(From Our Regular Correspondent)

Oct. 8, 1949.

"Free Medicine" Act Declared Invalid

The Full High Court of Australia today declared that in its judgment the Pharmaceutical Benefits Act 1947-1949 is invalid. This ends the second round of the five year "battle of the bottle" with the points heavily in favor of the British Medical Association. The first round opened with the passing of the Pharmaceutical Benefits Act 1944. It was challenged by the Victorian Branch of the British Medical Association and declared invalid by the High Court in 1945, on the grounds that the constitution of the commonwealth did not provide for the appropriation of money for social services other than (according to section 51) invalid and old age pensions.

The commonwealth government opened the second round in 1946 by holding a referendum. The necessary majority of votes approved the new wording of section 51:

"The provision of maternity allowances, widows' pensions, child endowments; unemployment, pharmaceutical, sickness, and hospital benefits; medical and dental services (but not so as to authorise any form of civil conscription), benefits to students and family allowances."

The phrase "but not so as to authorise any form of civil conscription" is important.

THE SECOND ACT

This new amendment to the constitution gave the government confidence to pass the second "free medicine" legislation, the Pharmaceutical Benefits Act 1947-1949. Included in this Act was section *7A,* which prescribed that a medical practitioner shall not write a prescription for any medicine in the formulary except on a prescription form supplied by the commonwealth. The penalty for a breach of this regulation was a fine of £50 ($110).

The prescription form supplied by the government entitled the recipient to receive his medicine at the expense of the government (from taxation contributions to the social services fund).

"CIVIL CONSCRIPTION"

The British Medical Association claimed that this section *7A* amounted to "civil conscription." This was the view of the British Medical Association's legal adviser. The British Medical Association claimed that doctors would be hindered in the proper treatment of their patients by the requirements of the act. It claimed that the act was invalid or that seven sections and twelve regulations were invalid.

The phrase "civil conscription" is a novelty, and one of the judges thought that the parliamentary draftsman had shied at the naked simplicity of the word "compulsion" and had coined that more harmless-sounding phrase. At any rate, compulsion in any guise was the cause of the act being declared invalid, because four of the six judges in the court held that section *7A* of the act amounted to a form of civil conscription.

"It was true," stated the judgment "that no one was compelled to adopt the profession of medicine. But, if he did so, he was affected in his freedom of practice and in his means of living unless he subscribed to the scheme whereby he was subject to control as to the form of treatment and the drugs he might prescribe.

"For the general practitioner, noncompliance meant loss of practice. The use of a particular form or the signing of a prescription was no mere automatic action.

"It was the result of the practitioner's examination and overhaul of the patient, diagnosis of the complaint, and the choice of the treatment, drugs, materials and appliances which his knowledge and skill dictated. It was the culmination of the medical service rendered by the practitioner to the patient.

"This might perhaps not be compulsion in the sense in which the word was used in connection with military service, but it was a form of civil conscription.

"It would no doubt be a form of industrial conscription to compel people by law to work in industries, whether industries were carried on by the commonwealth or by the states or their authorities, or by private individuals.

"It would be equally a form of civil conscription of medical or dental services to compel medical practitioners to carry on their professions in particular localities.

"A medical practitioner was compelled to render that service in the course of rendering a contractual service to his patient, but it was a service which formed no part of an implied contract for services created by a patient seeking the advice and treatment of a medical practitioner, and the practitioner examining the patient with a view to giving him advice and treatment.

"When Parliament came between patient and doctor and made lawful continuance of their relationship as such dependent on a condition, enforceable by fine, that the doctor should render the patient a special service, unless that service was waived by the patient, it created a situation which amounted to a form of civil conscription.

"This civil conscription could be avoided without any breach of the law to the extent that the doctor vacated the field of medicine, which, however, would involve in many, if not most cases, a considerable loss of practice and income.

"But it was still civil conscription. Military conscription would not cease to be such because those liable to fight might avoid it by a change of occupation.

"To amount to civil conscription it was not necessary that the service should be a full time service, or should be rendered as a member of a corps created for that purpose.

"A power to make laws on medical services could be held to authorise a law for the complete control of medical services, and would enable the government to control practice of the medical profession completely. Similarly, a power to make laws on pharmaceutical benefits could authorise a law for the complete control of pharmaceutical chemists' businesses.

"The object of conferring on parliament the power of providing pharmaceutical benefits was to provide these benefits under a scheme which would leave anyone at liberty to take part or stand aside, whether as doctor, chemist or patient."

Two of the judges held that the invalidity of section *7A* did not affect the other provisions of the act. If it were struck out, the act would work as a completely voluntary scheme.

(It was the failure of the act to work as a voluntary scheme which caused the introduction of section *7A* into the act, in April 1949.)

A dissenting judge held that "the material aid given to a scheme to promote for human needs was commonly prescribed by the word "benefit."

"When this word was applied to that subject matter," he said, "it signified a pecuniary aid, service, attendance or commodity made available for human beings under social welfare or social security legislation.

"State law commanding a doctor to sign a prescription or to date it would not engage the doctor in the service of the state. It would not be a form of conscription.

"This section did not provide for any form of civil conscription. The act did not by any form of law call any doctor to serve the commonwealth. No doctor was any less a private practitioner than he was before the act was passed.

"A doctor was legally free to decline to write any prescription under section *7A*."

REACTIONS TO JUDGMENT

"There is nothing the government could do after today's ruling," said Dr. John Hunter, the general secretary of the British Medical Association in Australia. "We do not expect any further legal action by the government."

"The British Medical Association had never argued against the government's right to pass legislation for free medicine.

"Doctors were deeply gratified by the High Court's ruling and believed that all Australians would feel the same way.

"The High Court upheld the view that the act in certain important respects infringed the constitutional safeguard established by the people against invasion by a government of their own and doctors' freedom.

"Doctors could still write their own prescriptions on their own forms. The British Medical Association was right back where it started."

In the Commonwealth Health Department, the judgment of the High Court is taken to mean the collapse of the government's health scheme plans.

The health minister (Senator McKenna), who is a lawyer, is studying the High Court's judgment. He will not decide whether to refer the six judgments to the Attorney-General for a possible appeal to the Privy Council until other possible courses of action have been considered. He would ask the government to consider alternative courses of action designed to insure full pharmaceutical benefits with as little delay as possible.

"As the law amended by the High Court today now stands, each doctor must decide whether his patient is to pay for costly life-saving and disease-preventing drugs or receive them without charge," Senator McKenna said.

BELGIUM

(From Our Regular Correspondent)

Sept. 20, 1949.

International Congress of Dermatology and Syphilology

The recent seventh International Congress of French-Speaking Dermatologists and Syphilologists in Brussels was the first reunion since the war. The subjects on the agenda included: bullous dermatosis; heredity in dermatology; eczema, and the treatment of syphilis.

The studies of Dupont and Piérard on chronic pemphigus and the dermatitis of Duhring-Brocq are noteworthy. They noted that the bullae of chronic pemphigus resemble most those of herpes zoster and of varicella and even those of sheep pox. The dominant lesion consists of degenerative cytologic alterations. In Duhring-Brocq's disease edema constitutes the essential element of the histologic picture; in this characteristic it resembles urticaria and eczema, in which exudative phenomena play an important role. On the basis of these facts the author regards the polymorphic dermatitis of Duhring as of allergic pathogenesis. Pemphigus, on the other hand, must be regarded as an infectious disease, probably due to a virus. Familial pemphigus of Hailey is distinct from chronic pemphigus and has no relation whatever with Darier's disease nor with bullous epidermolysis.

Tzanck discussed (1) the frequency of microbic eczemas and (2) the spectacular role of the antihistaminics in the treatment of eczema, two observations which have greatly enriched the means of therapeutic action have not, however, transformed pathogenic concepts. The third point of discussion was the rapid cure of an eruption by the suppression of a substance previously unsuspected as harmful.

He reported observations in 30 cases of eczema of the eyelids. In transcutaneous tests Tzanck and his collaborators demonstrated reactogenic substances twenty-five times in 30 cases. They chose the eyelids for their investigation because the skin in this region is particularly sensitive and because it is not subjected to traumas.

The cures obtained in several days by only suppressing the reactogenic substance have demonstrated the uselessness of the classic treatments.

It cannot be said that this success solves the problem in the treatment of eczema; this contribution represents only a supplementary, but extremely useful, measure. From the theoretical point of view there is justification for the definition which the author gives of eczema: a reaction of intolerance toward substances which are inoffensive for the majority of persons.

PRINCIPALITY OF MONACO

(From a Special Correspondent)

Sept. 20, 1949.

International Code of Medical Ethics

Carrying on the initiative taken in 1934 by the Prince of Monaco to find means of humanizing war, the Red Cross of Monaco will publish a collective work which constitutes a plan of codification of international medical law. The application of this new branch of international law in time of war gives hope that we shall not see again the atrocities which were committed during World War II.

Two types of facts, which are of immense importance from the point of view of the medical ideal, dominate in medicine during this period, and it is important that practical conclusions be drawn therefrom promptly.

Physicians have been condemned, even executed, in occupied countries for attending injured persons. Physicians have lent the cooperation of their science to political authorities to perpetrate attacks against the life and the health of human beings or have helped to prepare new methods of destruction. It is necessary at any price that in present circumstances one continue to try to find or to create a supergovernmental authority which can intervene to guarantee to medicine the free and noble exercise of its art and to prevent its employment for criminal ends. This is the sphere of international legislation. But it is not enough to draw up laws; it is also necessary that the conscience of the individual be prepared to respect them.

For this reason it will be desirable that all schools and faculties of medicine of the world organize a course in international medical ethics which will specify the rights and duties of the physician in all circumstances of peace and war. This course will be consecrated by a solemn oath such as has been required by the World Medical Association, but in our view it should be administered before an international court of justice which could send a delegation to the various faculties for this purpose.

Since it is taken before a court of international justice, the importance of the oath cannot be misunderstood by anybody, and all who commit perjury can be prosecuted and punished. This oath will be a résumé of international medical ethics.

This is a summary of the efforts made by Monaco. The Academy of Medicine of Paris recently discussed the problem and voted unanimously on the following motion:

"The National Academy of Medicine in recalling the Nuremberg trials and the crimes committed during wars and conflicts of all types against the human being, particularly the injured, the sick, prisoners or those held in detention camps, and refusing to let the medical corps be made the instrument of any pressures whatsoever bearing on the attainment of their physical, moral or intellectual integrity make the vow that the carrying out of medical functions in time of war as in time of peace should be established by a code of international ethics of an obligatory character, to be established by an international medical organization, a code, instruction in which should be obligatory in all schools and faculties of medicine in all countries."

If the great organizations cited will give their cooperation to this generous work, it will have favorable results for the medical profession in times of war, the rights and the duties of physicians then being clearly defined.

Correspondence

BLACK HAIRY TONGUE FOLLOWING USE OF PENICILLIN

To the Editor:—In a recent issue of The Journal (140:1206 [Aug. 13] 1949) Dr. S. A. Wolfson directed attention to the condition known as black hairy tongue following the use of penicillin locally in the oral cavity. My co-workers and I have made some observations on the effects of penicillin administered in this manner which may be of interest. It has been found that the dark velvety tufts which develop on the tongue within several days, when the lozenges are taken, subsequently slough off with the continued use of penicillin. Penicillin in this form may be used effectively to promote desquamation of the long black filaments which characterize lingua nigra resulting from other causes.

This was first observed incidentally in a man, 39 years of age, who was confined to bed with residual rheumatic fever. The sedimentation rate had remained elevated for several weeks, while clinically the patient was much improved. He was a heavy smoker; oral hygiene was poor. Associated typical lingua nigra, which had been present for several years, was noted. In an attempt to allay any influence which poor oral hygiene might have on the sedimentation rate, a therapeutic trial of penicillin lozenges, 1,000 units three times a day was prescribed. After the lozenges had been taken daily for two weeks, the dark, heavy coating on the tongue desquamated in patches, leaving a red, smooth, slightly sensitive surface.

In a second case, in which the tongue was initially normal in appearance, penicillin inhalations were prescribed for persistent low grade pharyngitis (100,000 units were given four times daily). Brownish fur developed on the tongue on the second day. On the third day the inhalations were discontinued. The heavy coating sloughed off the following day. When last seen, nine days later, the tongue was still smooth and red. The patient did not complain of any discomfort.

The bald, slightly sensitive tongue which results from the desquamation of the hairy coating resembles the tongue as it has been described in certain vitamin B deficiencies. In one case, however, a typical smooth tongue developed in this manner while large doses of vitamin B complex were being administered parenterally. It is questionable, therefore, whether nutritional deficiency is concerned in this reaction of the lingual epithelium. The mechanism involved is not known.

Black tongue develops by an elongation of the tips of the filiform papillae. These are composed normally of short tufts of cornified cell material. Their length is determined by a balance between the rate at which desquamation takes place and the rate at which they are reformed. When they become elongated, either the rate at which the cornified material is formed has increased or that which is produced at a fixed rate remains adherent to the papilla for a longer time.

In promoting the development of black tongue, penicillin acts in some manner, therefore, either to increase the rate at which cornification takes place or to modify the texture of the cornified material formed at a fixed rate, so that it is more cohesive. The desquamation and relatively atrophic condition of the epithelium which follows the continued use of penicillin would appear to result from some entirely different mechanism.

An attempt to clarify the action of penicillin on cornification in simple stratified epithelia by the use of cytologic technics is now in progress in our laboratory. It has been found that the use of penicillin suppositories also influences cornification of the vaginal epithelium. In several cases investigated to date, a vaginal smear picture simulating that of hyperestrinism has been produced in this manner. With the continued use of penicillin an atrophic smear picture has subsequently developed. The production of a high cornification level in the vaginal smear with the topical application of penicillin indicates that hypercornification does not always reflect a high level of estrogen activity.

There is the suggestion, in the evidence accumulated to date, of the possibility that penicillin may directly influence the enzymes of the cells which are involved in the cornification process. A detailed report of these studies is now being prepared for publication.

W. Burton Ayre, M.D.
Robert Favreau, M.D.
J. Ernest Ayre, M.D.
McGill University, Montreal.

TONSILLECTOMY DURING EPIDEMIC POLIOMYELITIS

To the Editor:—The editorial "Tonsillectomy During Epidemic Poliomyelitis," The Journal, June 4 (page 479), misquotes figures. It says in part:

"Cunning's report and other factual material relating to this question were recently reviewed by Faber. Data on 4,331 cases of poliomyelitis occurring in twenty-five states during 1947 which had been reported by Cunning were reexamined. Incidence of the bulbar type of poliomyelitis was noted to be 25 per cent in the group who had been subjected to tonsillectomy within two months of onset. Incidence of the bulbar type in the entire group was 11.7 per cent. Corresponding figures for 1946 showed an incidence of 29 per cent bulbar type of poliomyelitis among the post-tonsillectomy cases as compared with 15.4 per cent of the bulbar type in the entire group."

The figures mentioned, namely, 25 per cent as the incidence of the bulbar type of poliomyelitis in the group subjected to tonsillectomy within two months of the onset in 1947 and 29 per cent as the incidence of the bulbar type of poliomyelitis in the group subjected to tonsillectomy within two months of the onset in 1946, are correct. A review of the Cunning reports will reveal the 25 per cent should have been 1.2 per cent and the 29 per cent should have been 4.7 per cent. The editorial also failed to mention the 16,643 cases of tonsillectomy performed and carefully followed in fifteen different states throughout the country for a period of two months after operation, in none of which did bulbar poliomyelitis develop.

For four years the Committee for the Study of Poliomyelitis and Tonsillectomies of the American Laryngological, Rhinological and Otological Society, Inc., has honestly attempted to learn the truth concerning the relationship between poliomyelitis and tonsillectomies. This committee, a large number of the country's leading epidemiologists and many local health authorities agree on two main points: (1) Tonsillectomies and adenoidectomies or any other elective operation should not be performed in a community where poliomyelitis (or any other contagious disease) assumes epidemic proportions, and (2) tonsillectomies and adenoidectomies can with safety be performed in a community where poliomyelitis (or any other contagious disease) does not assume epidemic proportions.

Daniel S. Cunning, M.D.
Chairman, Committee for the Study of Poliomyelitis and Tonsillectomies
American Laryngological, Rhinological and Otological Society, Inc.
118 East 53rd Street, New York 22.

Bureau of Investigation

ASPIRIN PLUS FOR ARTHRITIS

The proprietary drugs "Dolcin" and "Imdrin" are currently being exploited as something new and different in the treatment of the various forms of rheumatism and arthritis.

The Dolcin firm uses the radio and has "detailed" the medical profession by mail. The people handling "Imdrin" seem to prefer full page spreads in newspapers from coast to coast. Both apparently are enjoying a successful business.

The promotion for "Dolcin" features a report in the *Ohio State Medical Journal* for October 1947.[1] This was abstracted in THE JOURNAL.[2] A correction on dosages appeared in a later issue.[3] Dolcin had been on the market for approximately a year before the appearance of this report. Wide distribution of a reprint to members of the medical profession followed. Accompanying it was a cover letter, the second paragraph of which read:

> Published in the October 1947 issue of the *Ohio State Journal of Medicine*, this study, by M. M. Szucs, M.D., *covers the results of 396 cases of several forms of arthritis treated with Dolcin.* [Italics ours. —Ed.]

The volume of inquiries prompted a letter to Dr. Szucs for details. He replied:

> . . . I wish to state that I was not aware and emphatically do not approve of the action of the Dolcin Corporation and the promotion of their drug as a cure-all for arthritis and rheumatism. As stated in my article published in the October issue of the *Ohio State Medical Journal*, I used the Dolcin preparation in the early stages of my experiments; but due to undesirable reactions which I obtained in some cases, changed my formula several times. Dolcin was used on an estimated ten (10) cases of the total 396 cases.

In a later letter explaining the undesirable reactions mentioned, he wrote:

> As stated in the article, there was a slight gastric upset experienced in some cases, but as this was noticed with calcium succinate as well as with succinic acid, I cannot definitely assert that it was due to the Dolcin preparation.

A seizure action under the Federal Food, Drug and Cosmetic Act of 1938 was recently terminated in a federal court in New Jersey. In response to a request for particulars, the Bureau was advised:

> In the seizure of "Dolcin Tablets," manufactured by the Dolcin Corporation, New York, New York, there was entered in the Federal District Court for New Jersey, on December 6, 1948, a decree of condemnation and forfeiture and order for destruction.
>
> Whether the adjudication should be technically described as arrived at through default or by consent is an open question. The decree states, "Claimant represents to the Court that the said product is now being marketed with changed labeling which does not bear the representations which were the basis of the instant action. Consequently, claimant believes that no useful purpose would be served by contesting this case and requests the Court's permission to withdraw its claim and answer. This request is hereby granted.
>
> The adjudication of this seizure should not be construed as indicating that the present labeling employed by the Dolcin Corporation has the sanction of the Food and Drug Administration.

A second federal seizure, alleging false and misleading therapeutic claims on the retail package, is now pending against a consignment of "Dolcin" found in New Jersey by Food and Drug agents.

The Federal Trade Commission, which has jurisdiction over advertising claims made by drug firms, has announced that a complaint has been filed against the Dolcin Corporation and its officer-directors, wherein is charged false and misleading advertising of "Dolcin." The complaint alleges that the effect of the drug is "limited to temporary and partial relief of minor aches and pains and fever." It is further alleged that the only therapeutically active ingredient of the product is aspirin. The firm has an opportunity to file an answer to these charges.

In July 1949 an English investigator[4] reported on his experience with a tablet made up for the purposes of study, providing a daily dosage of 45 grains (3 Gm.) of acetylsalicylic acid and 35 grains (2.3 Gm.) of calcium succinate. The English investigator notes that in his cases the occurrence of dyspepsia was greater than that reported by Szucs. He commented: "Unfortunately, it was found in practice that the full dose could not be tolerated by a large number of patients owing to the development of dyspepsia of varying severity." He concluded:

> The final clinical impression was that the administration of the salicylate/succinate compound was a useful adjuvant to treatment. No opinion could be expressed with regard to its superiority over acetylsalicylic acid in comparable dosage.

"Imdrin" is the other scientific wonder now being advertised as a specific for rheumatism and arthritis. Full page spreads refer to an "Amazing New Discovery for Rheumatism, Arthritis—No Faster Pain Relief Known . . . Safe . . . Hospital Tested—Stops Swelling . . . Uncorks Joints . . . Contains Sensational New Research Discovery."

In the advertisement the product's being "hospital tested" is expanded below the picture of a laboratory worker surrounded by the tools of his profession. It is stated:

> . . . Yes, medical men, after three years of extensive hospital tests, have proved conclusively Imdrin works internally toward amazing reduction of pain, heat, redness, and swelling of the joints. Patients undergoing Imdrin therapy in these hospital clinics often were able to resume comfortable living completely, after other remedies had failed . . .

Elsewhere it is stated:

> . . . Medical science developed the amazing wonder-working drugs Sulfa and Penicillin . . . then turned attention to relieving the agonizing pains caused by rheumatism and arthritis. The result of extensive research is a wonder-working ingredient which is now combined with other pharmaceuticals into a remarkable preparation called Imdrin. . . .

The Bureau asked the firm for details. More than a month later a reply was received, which read:

> In response to your queries, it may be indicated that the researches on the formulation in question were conducted by Dr. S. N. Blackberg of Chicago. This study was initiated at the Michael Reese Hospital and completed at the Mount Sinai Hospital of Chicago.

Apparently 57 patients were treated for periods ranging from one to forty-four weeks with what was called "Manganese Salicylate Formulation." Adjuvant therapy included physical therapy, corrective exercises, multiple vitamins, alpha tocopherol acetate, roentgen rays and ferrous sulfate. One patient was reported as improved after he had moved from damp basement living quarters.

Inquiry of Dr. Blackberg revealed this comment:

> . . . I have never heard of "Imdrin" and want to assure you that under no condition would I knowingly use, test or recommend a product which would be advertised to the laity for the treatment of arthritis . . . I am fully aware of the dangers of self-medication, especially in a disease or group of diseases such as the arthritides.
>
> About a year ago Dr. William Fishbein, City Epidemiologist and member of the Chicago Department of Health, asked me to test a product, the formula of which was as follows:
>
> Each tablet contains:
>
> | | |
> |---|---|
> | Thiamine hydrochloride | 1 mg. |
> | Acetyl salicylic acid | 150 mg. |
> | Manganese salicylate | 150 mg. |
> | Caffeine | 10 mg. |
>
> This product was called "Mancylate" and was to be promoted only through ethical channels to the medical profession. In fact, I helped prepare a schedule for the promotion of Mancylate in three of the midwestern states. This schedule included local medical bulletins only. No mention was made of ever promoting this product to the consumer and as far as I know, it never has been advertised to the laity. I studied the product in more than 50 patients and specifically stated that the investigation would be for the purpose of determining the value of mancylate as an analgesic agent in the treatment of patients with arthritis and related diseases. I made it very clear that I would observe only its effect in so far as diminution of pain was concerned and that the investigation was not for the purpose of studying its effect on the course or progress of the disease. . . .

"Imdrin" first appeared on the market approximately three years ago. At that time it was called "Emdrin" and did contain the ingredients mentioned as forming the composition of "Mancylate." What prompted the manufacturer to change the name and add calcium succinate is difficult to determine. The Dolcin Corporation at this time appeared to be doing a land-office business, with its aspirin and calcium succinate.

In the fall of 1948 the advertising campaign for "Imdrin" was in full bloom. One enterprising druggist in Kansas City regarded the advertising as good display material. He used the copy in an attempt to increase sales. A Food and Drug inspector, however, took samples, which included photographs of the display, and the result was a federal seizure action now pending in the federal court in Cincinnati. It is alleged in government pleading that the product will not accomplish the therapeutic benefits claimed for it in the advertising. The retail bottle merely describes the medication as "an aid in the relief of muscular aches and pains." In its pleading, also, the government charges the firm with failure to reveal on the label the fact that aspirin is an active ingredient.

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[1] Szucs, M. M.: Succinate-Salicylate Therapy in Arthritis, Ohio State Medical Journal **43**: 1035 (Oct.) 1947.

[2] J. A. M. A. **135**: 1114 (Dec. 20) 1947.

[3] J. A. M. A. **136**: 196 (Jan. 17) 1948.

[4] Kennedy, A. F.: The Use of Calcium Succinate and Acetyl-Salicylic Acid in the Treatment of Rheumatic Disease, Rheumatism **5**: 86 (July) 1949.

"Imdrin," too, was recently accorded attention by the Federal Trade Commission. A complaint has been filed, alleging that this product is limited in its therapeutic benefit to temporary or partial relief of minor aches and pains and fever. The commission announced:

> Contrary to advertising claims for the product [Imdrin], the complaint continues, persons afflicted with rheumatic and similar ailments so severely as to interfere with their normal habits of life or their ability to carry on their regular occupations will not be enabled to resume such habits or occupations by taking Imdrin.
>
> *Finally*, the complaint characterizes as false and misleading the representation that Imdrin will correct any disturbance of the vital enzyme systems of the blood and bones to insure their adequate function.

The Commission announced, also, that the firm has twenty days in which to answer its charges.

In more recent years, label claims of cures have disappeared; prosecutions and seizures now apply to misbranding of the retail package and accompanying literature. However, there still is opportunity for deception by the use of appropriately chosen words. Physicians whose services are sought in the promotion of drug products should obtain information on the background of the firm, or they may find themselves described in "patent medicine" advertising as the scientific authority for medications claimed to be miraculous.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Parts I and II*, Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Written and Review of Case Histories. Part I.* Various Centers. Feb. 3. Final date for filing applications is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II*, New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Proctology: *Examination in Anorectal Surgery.* Philadelphia, Nov. 12. Sec.-Gen., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas: * *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

Colorado: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Connecticut: * *Examination.* Hartford, Nov. 8-9. Secretary to the Board, Dr. Creighton Barker, 160 St. Ronan Street, New Haven. *Homeopathic.* Derby, Nov. 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

District of Columbia: * *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maine: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Massachusetts: Boston, Nov. 15-18. Sec., Dr. George L. Schadt, 413 East State House, Boston.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Missouri: *Examination.* Jefferson City, October 24-26. *Reciprocity.* Kansas City, October, 23. Exec. Sec., Mr. John A. Hailey, State Capitol Building, Jefferson City.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: * *Endorsement.* Portland, Nov. 4. *Written.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy. Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Esther B. Starks, 1459 Ogden Street, Denver.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

New Mexico: *Examination.* Santa Fe, Nov. 6. Sec., Miss Marguerite Kilkenny, 110 W. Houghton St., Santa Fe.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

16:161-196 (May) 1949

Propeptan Therapy for Gastro-Intestinal Food Hypersensitivity. A. H. Price, F. Urbach, H. A. O'Neill and E. J. Tallant.—p. 161.
Presence of Anti-Rh Agglutinin in Commercially Available Medicinal Hog Gastric Mucin. R. D. Barnard, G. B. Gordon and H. Weitzner. —p. 172.
Dextrose, Insulin and Epinephrine Tolerance Tests in Cirrhosis of Liver. R. W. Hillman.—p. 174.
Unusual Case of Perforated Littre Femoral Hernia. J. A. Lazarus. —p. 180.
Newer Studies of Iron Ascorbate. S. L. Ruskin and A. T. Merrill. —p. 182.

American Journal of Medical Sciences, Philadelphia

217:593-720 (June) 1949

*Rapid Attainment of Therapeutic Penicillin Concentrations in Cerebrospinal Fluid. W. P. Boger and W. W. Wilson.—p. 593.
*Effective Penicillin Therapy in Subacute Bacterial Endocarditis and Other Chronic Infections. J. G. Schlichter, Helen MacLean and A. Milzer. —p. 600.
Pericardial Effusion: Constant, Early and Major Factor in Cardiac Syndrome of Hypothyroidism (Myxedema Heart). R. A. Kern, L. A. Soloff, W. J. Snape and Carmen T. Bello.—p. 609.
Some Cardiological Problems of the Tropics. E. Garcia Carrillo.—p. 619.
Thiourea Compared with Propylthiouracil in Treatment of Thyrotoxicosis. G. T. Kent, R. A. Shipley and K. D. Rundell.—p. 627.
Concentrated Roentgen Therapy of Cervical Tuberculous Lymphadenitis. I. Lampe, C. P. Chrest and D. A. Koch.—p. 632.
Transfusion of Arterial Hypertensive and Normotensive Blood into Hypertensive Subjects. M. L. Goldman, J. P. Kriss, P. H. Futcher and H. A. Schroeder.—p. 637.
Influence of Alcohol on Intravenous Galactose Tolerance Test. L. Greenman, J. S. Tipping and J. D. Rosenbaum.—p. 644.
Certain Effects of Salt Poor Human Albumin in Cases of Hepatic Disease. C. J. Watson and A. Greenberg.—p. 651.
Prozone Phenomenon in Serodiagnosis of Syphilis: Clinical Study. Virginia P. Beelar, H. J. Zimmerman and B. Manchester.—p. 658.
Recovery from Uremia: Report of Five Cases. I. L. Leff, B. Rosenberg, W. Eisenmenger and J. M. Steele.—p. 666.
Occurrence of Herpes Zoster in Carcinoma of the Breast. E. P. Pendergrass and D. Kirsh.—p. 674.

Therapeutic Penicillin Concentrations.—Boger and Wilson administered 500,000 units of penicillin in aqueous solution by intravenous route to 21 patients with syphilis of the central nervous system who had uninflamed meninges. The intravenous route was employed in order to obtain a brief but high penicillin concentration in the plasma that might favor diffusion across the blood-brain barrier. Demonstrable concentrations of penicillin resulted in the cerebrospinal fluid within two hours. Three patients who failed to show diffusion of the antibiotic into the cerebrospinal fluid after the intravenous administration of 500,000 units showed measurable quantities of penicillin in the cerebrospinal fluid when carinamide was administered intravenously in conjunction with the same dose of penicillin. The observation that therapeutically significant levels of penicillin were attained in the cerebrospinal fluid in all of the patients studied suggests that the parenteral and particularly intravenous administration of penicillin has a place in the therapy of purulent meningitis and that intrathecal injection of penicillin is unnecessary in the majority of patients.

Penicillin in Subacute Bacterial Endocarditis.—Schlichter and co-workers assayed the bacteriostatic activity of the penicillin level in the blood serum by using the strains of alpha hemolytic streptococci isolated from 10 patients with subacute bacterial endocarditis during treatment with penicillin. By this method the minimal effective level is that concentration of assayable penicillin in the blood serum which can be shown to be completely bacteriostatic for the strain isolated. The authors believe that the optimal therapeutic level should be at least twice the minimal effective level, as shown by their direct test. Seven cases of septicemia due to hematogenous spread of alpha hemolytic streptococci and Staphylococcus aureus from foci of acute and chronic infection were selected for further investigation of the efficacy of this type of controlled therapy because of the relatively high initial sensitivity to penicillin of many strains of Staphylococcus aureus and the tendency for occasional strains to increase progressively in resistance when there was inadequate healing. Penicillin therapy in such cases should be based on maintenance of adequate serum levels as judged by the direct test for considerable periods of time. Unnecessarily high levels are not only economically wasteful but may possibly result in prolonging the duration of therapy by reducing the bactericidal rate of the strain involved. Planned therapy is a valid and effective basis for treatment of subacute bacterial endocarditis and chronic infections due to relatively resistant strains of susceptible organisms.

American Journal of Medicine, New York

6:535-680 (May) 1949

SYMPOSIUM ON POLIOMYELITIS

Epidemiology of Poliomyelitis in Light of Modern Research. H. A. Howe.—p. 537.
Viruses of Poliomyelitis. R. Ward.—p. 551.
Mechanism of Immunity in Poliomyelitis and Its Bearing on Differentiation of Types. I. M. Morgan.—p. 556.
Histopathologic Basis of Clinical Findings in Poliomyelitis. D. Bodian. —p. 563.
Problems of Pathologic Physiology of Poliomyelitis. F. Buchthal. —p. 579.
Clinical Aspects of Acute Poliomyelitis. D. M. Horstman.—p. 592.
Moist Heat in Treatment of Poliomyelitis. W. T. Green and T. Gucker. —p. 606.
Bulbar Poliomyelitis: Its Mechanism and Treatment. A. B. Baker. —p. 614.
Care of After Effects of Poliomyelitis. R. L. Bennett.—p. 620.
Public Health Considerations of Poliomyelitis. J. G. Molner.—p. 628.

Adrenal Medullary Tumor (Pheochromocytoma). F. N. Hatch, V. Richards and R. J. Spiegl.—p. 633.
Treatment of Pernicious Anemia with Crystalline Vitamin B_{12}. R. West and E. H. Reisner Jr.—p. 643.

6:681-804 (June) 1949

*Modification of Effects of Immobilization upon Metabolic and Physiologic Functions of Normal Men by Use of Oscillating Bed. G. D. Whedon, J. E. Deitrick and E. Shorr.—p. 684.
*Effect of Vomiting Due to Intestinal Obstruction on Serum Potassium: Chemical and Electrocardiographic Observations in 15 Cases. Preliminary Report. S. Bellet, C. S. Nadler, P. C. Gazes and M. Lanning. —p. 712.
Hemodynamic Studies in 2 Cases of Wolff-Parkinson-White Syndrome with Paroxysmal AV Nodal Tachycardia. M. I. Ferrer, R. M. Harvey, H. M. Weiner, R. T. Cathcart and A. Cournand.—p. 725.
Studies on Coronary Circulation: V. Quantitative Changes in Serum Mucoprotein Following Occurrence of Myocardial Infarction. B. Simkin, H. C. Bergman and M. Prinzmetal.—p. 734.
Clinical Value of Serum Polysaccharide Determinations by Tryptophane-Perchloric Acid Reaction. H. L. Israel, M. B. Webster and I. E. Maher.—p. 745.
What Can We Learn from Medical History? C. Binger.—p. 751.
Fluorocardiography (Electrokymography). A. A. Luisada and F. G. Fleischner.—p. 756.

Modification of Effects of Immobilization by Oscillating Bed.—Whedon and associates investigated the ameliorating influence of an ingeniously contrived oscillating bed on the metabolic and physiologic effects of prolonged immobilization. Three healthy young men were studied on a constant dietary intake before, during and after a five week period of immobilization in plaster casts in oscillating beds. These 3 subjects had all taken part in the immobilization experiment (on standard hospital or fixed beds) previously reported. Data on nitrogen, calcium, phosphorus, total sulfur, sodium and potassium balances, together with other measurements of interest carried out under rigidly controlled conditions, are given in detail. The results indicate that the oscillating bed may be useful in the management of disorders involving protracted immobilization.

Low Serum Potassium in Intestinal Obstruction.—Bellet and associates discuss the effect of severe vomiting on the serum potassium level. The serum potassium was found to be low in 15 patients with protracted vomiting and decreased still further after therapy with saline and dextrose solutions. That the depletion involved not only the serum potassium but the intracellular potassium is suggested by the small rise in serum concentration following injection of relatively large doses of potassium chloride. The electrocardiogram is a fairly good criterion of potassium deficiency and of considerable importance in the diagnosis of this condition. Administration of potassium resulted in clinical improvement in the patients so treated and in a return of the electrocardiogram to normal. Administration of this electrolyte in such states is important and in some patients may be life-saving.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

61:591-742 (May) 1949

Technics for Application of Betatron to Medical Therapy with Report of 1 Case. H. Quastler, G. D. Adams, G. M. Almy and others. —p. 591.
*Role of Nitrogen Mustard (HN_2) as Systemic Adjunct to Radiation Therapy of Certain Malignant Diseases. B. Roswit and G. Kaplan. —p. 626.
Studies on Respiratory Mechanics. F. Polgar.—p. 637.
Small Intestinal Pattern in Sprue and Similar Deficiency Diseases. A. Ettinger.—p. 658.
Double Gallbladder: Roentgenographic Demonstration of Case of "Y" Type; Classification of Accessory Gallbladder. A. P. Ingegno and J. B. D'Albora.—p. 671.
Co-Existent Benign Gastric Ulcer and Adenocarcinoma of Stomach. J. T. Brackin and J. M. Miller.—p. 677.
Adenocarcinoma of Jejunum: Report of 2 Cases. P. B. Parsons.—p. 680.
*Diagnosis of Spinal Meningiomas and Schwannomas by Myelography. E. H. Wood Jr.—p. 683.
Osteogenesis Imperfecta Tarda. L. Pelner and J. N. Cohen.—p. 690.
Roentgen Anatomy of Oblique Views of Lumbar Spine. L. E. Etter and N. C. Carabello.—p. 699.
Roentgenologic Recognition of Radiopaque Sponges. H. S. Weens and J. V. Rogers Jr.—p. 706.
Sterile Pyuria. K. C. Hardesty.—p. 711.

Nitrogen Mustard (HN_2) as Adjunct to Radiation Therapy.—Roswit and Kaplan say that although the treatment of malignant disease with the nitrogen mustard, methyl-bis (beta-chloroethyl) amine hydrochloride, is still in the investigative phase, it is already clear that treatment with the compound is purely palliative and not a cure. The drug should not be employed in early, localized Hodgkin's disease or lymphosarcoma. In these patients the best chance for survival is in rigorous local roentgen therapy. Nitrogen mustard therapy is not a substitute for roentgen irradiation in early generalized malignant lymphomas while they remain responsive to roentgen therapy. The authors found this corroborated in their experience in the radiation treatment of more than 700 such cases. Such patients may survive for several years with carefully planned, fractionated radiation therapy. Radioresistance is not encountered in these diseases until the malignant process is advanced. It is at this time that nitrogen mustard therapy is justified. The authors do not support the suggestion that this drug be employed as a maintenance measure in malignant lymphomas, including the chronic leukemias. The cumulative systemic intoxication thus induced leads to a hypoplastic or aplastic bone marrow and atrophy of the testes. The leukopenia, anemia and thrombopenia induced by nitrogen mustard may contraindicate the use of irradiation. The authors believe, however, that the agent is an indispensable systemic adjunct in the treatment of advanced, generalized malignant lymphomas at intervals when irradiation becomes ineffective or unfeasible. Nitrogen mustard is of aid in the treatment of inoperable bronchogenic carcinoma, but in other malignant disorders the compound is apparently ineffective. It is to be hoped that other nitrogen mustard derivatives will be found which will be much less toxic and far more effective.

Myelography in Spinal Meningiomas and Schwannomas.—Wood points out the myelographic abnormalities which suggest the presence of a meningioma or schwannoma (nerve sheath tumor) in the spinal intrathecal spaces. He reviewed 30 cases of intradural spinal meningiomas and nerve sheath tumors studied by radiopaque oil myelography. In each instance the tumor was removed surgically. The tumors were classified by microscopic examination of the specimen. Meningiomas and nerve sheath tumors occurred with almost equal frequency. There were 16 patients with tumors of meningeal origin and 14 patients with nerve sheath tumors. Partial or complete obstruction to the flow of contrast medium by the tumor occurred in every case. Each neoplasm produced a sharply demarcated filling defect in the radiopaque oil column indicative of an intrathecal tumor. In 28 patients displacement of the spinal cord on spinal nerve roots by the neoplasm was demonstrated in the myelogram. Displacement of these neural structures signifies that the lesion is extramedullary. A meningioma rather than a schwannoma may be suspected when the myelogram discloses a tumor with a broad dural attachment and slightly irregular surface. Nerve sheath tumors, being encapsulated, are surrounded by the radiopaque oil more thoroughly than are meningiomas. The preoperative differentiation of meningiomas from schwannomas is of greater academic than practical interest, because tumors of both types usually are amenable to complete surgical excision.

Annals of Internal Medicine, Lancaster, Pa.

30:895-1086 (May) 1949

Prothrombin Time in Dicumarol Therapy. F. C. Coleman.—p. 895.
Early Diagnosis of Carcinoma of Stomach. N. Bolker.—p. 903.
Facial Pain. C. J. McGee and W. D. Luxmore.—p. 914.
Periarteritis Nodosa—Possible Relation to Increased Usage of Sulfonamides. M. L. Gelfand and S. Aronoff.—p. 919.
Obstruction of Superior Vena Cava: Review of Literature and Report of 2 Personal Cases. F. T. McIntire and E. M. Sukes Jr.—p. 925.
Urinary Excretion of Creatine in Arthritis. L. W. Granirer.—p. 961.
Neurocirculatory Asthenia. W. M. Bartlett.—p. 966.
*Treatment of Malignant Disease with Nitrogen Mustard. N. B. Kurnick, K. R. Paley, M. H. Fieber and D. K. Adler.—p. 974.
Physiological and Biochemical Basis for Use of Vitamine E in Cardiovascular Disease. W. E. Shute, E. V. Shute and A. Vogelsang. —p. 1004.
Hepatitis Among American Occupation Troops in Germany: Follow-Up Study with Particular Reference to Interim Alcohol and Physical Activity. H. T. Gardner, R. A. Rovelstad, D. J. Moore and others. —p. 1009.
*Nocturnal Gastric Secretion in Patients with Benign Gastric Ulcer. E. Levin, J. B. Kirsner and W. L. Palmer.—p. 1020.
*Streptomycin Treatment of Bacterial Endocarditis Due to Streptococcus Viridans; Report of 2 Cases. C. F. Naegele.—p. 1049.

Nitrogen Mustard in Malignant Disease.—Kurnick and associates report observations on 64 patients who were treated with methyl-bis (beta-chlorethyl) amine hydrochloride (HN_2). Brief remissions were obtained in 20 of 24 patients with Hodgkin's disease, including several who had become roentgen resistant. In patients with carcinomas the tumors were uniformly unresponsive to the action of the drug (with two minor exceptions). Those with reticulum cell sarcoma and chronic lymphatic leukemia were only fleetingly benefited or failed to respond at all. One patient with chronic nonleukemic myelosis with splenomegaly and myelofibrosis improved dramatically. In lymphosarcoma and mycosis fungoides the response was variable, but the results were usually poor. In chronic myelogenous leukemia there was no response. The authors are of the opinion that in certain instances the nitrogen mustards have advantages over their physical counterpart, roentgen rays. In cases of widespread or inaccessible lymphomatous lesions, in which roentgen therapy is not feasible, the drug finds particular application. Fever due to lymphoma responds much more regularly and dramatically to chemotherapy. In moribund patients the more rapid and occasionally dramatic effect of nitrogen mustard therapy is advantageous. Constrictive lesions of the great vessels or the spinal cord often respond more rapidly to the chemical agent than to roentgen rays. The initial swelling of tumor tissue often seen following roentgen therapy has not been observed with nitrogen mustard. For the treatment of readily accessible or localized lesions the authors continue to regard roentgen irradiation as the treatment of choice. The toxic reactions observed were the same as those previously reported.

Nocturnal Gastric Secretion in Benign Gastric Ulcer.—Levin and associate report on the periodicity and variability of the nocturnal gastric secretion in patients with gastric ulcer and gastric carcinoma and compare them with these factors in normal persons and in patients with duodenal ulcer. The secretion of gastric juice in patients with benign gastric ulcer is apparently continuous, although the secretion of hydrochloric acid is not continuous. The volume of secretion and output of acid are usually higher during the first half of the night than during the last half. Individual variations exist. In the majority of instances, patients with a low volume and secretion of acid in one night produce a low volume and acidity on successive nights; a similar constancy exists in patients with a high secretory rate. The rate of gastric secretion is not constant, varying spontaneously from hour to hour in the same person. The volume, concentration and output of acid in the fasting nocturnal gastric secretion are lower in patients with benign gastric ulcer than in patients with duodenal ulcer. There is no significant difference in the average volume secreted by patients with benign gastric ulcer and by normal persons. The concentration of free hydrochloric acid and output of acid are lower in patients with gastric ulcer.

Streptomycin in Endocarditis Due to Streptococci of the Viridans Group.—Naegele reports that streptomycin was successfully used in the treatment of 2 cases of bacterial endocarditis caused by typical streptococci of the viridans group. The causative organism was isolated in each case and determined to be relatively insensitive to penicillin in vitro but sensitive to concentrations of streptomycin that could be, and actually were, clinically attained. Follow-up study of 1 of the patients nineteen months after discharge from the hospital revealed that he had remained clinically well. Residual vestibular dysfunction had subsided.

Annals of Otol., Rhin. and Laryngology, St. Louis

58:1-318 (March) 1949

Antibiotics in Treatment of Diseases of Ear, Nose and Throat. A. C. Furstenberg.—p. 5.
*Diagnosis of Malignancy of Nasopharynx. Cytologic Studies by Smear Technic. L. F. Morrison, E. S. Hopp and R. Wu.—p. 18.
Relation Between Hearing Loss for Specific Frequencies and Distance at Which Speech Can Be Identified. E. T. Curry.—p. 33.
Tantalum in Rhinoplastic Surgery. S. L. Fox.—p. 40.
Vertebrated Magnets for Removal of Foreign Bodies from Air and Food Passages. C. Jackson and C. L. Jackson.—p. 55.
Anesthesia in Fenestration Surgery. J. H. Tucci.—p. 61.
Chondroma and Chondrosarcoma of Larynx. M. R. Link.—p. 70.
Physical Problems in Conduction Deafness. H. B. Perlman.—p. 86.
*Otologic Effects of Streptomycin Therapy. L. J. Wallner.—p. 111.
Amyloid Tumors of Larynx, Trachea or Bronchi: Report of 15 Cases. D. B. Stark and G. B. New.—p. 117.
Cancellous Bone Grafts in Nasal Repair. M. H. Cottle, R. M. Loring, M. H. Cohen and R. Kirschman.—p. 135.
Lateral Sinus Thrombosis: Review of Recent Literature and Report of Case. P. D. Latella and J. H. Hopkins.—p. 147.
Angiosarcoma: Review of Literature. J. M. Kinkade.—p. 159.
Carcinoma of Antrum: Report of 9 Cases with Ten-Year Survey of Literature. C. A. Seelig.—p. 168.
Penicillin Aerosol Therapy in Sinusitis. F. J. Hynes.—p. 189.
Nasoalveolar Cysts. J. B. Miller and P. M. Moore Jr.—p. 200.
Cysts of Nasal Vestibule. F. Montreuil.—p. 212.

The Smear Technic in Diagnosis of Malignant Disease of the Nasopharynx. — Morrison and associates are of the opinion that the difficulties involved in making an early diagnosis of malignant disease of the nasopharynx have been ascribed to the smallness of the initial lesion; to the fact that the condition is usually asymptomatic until metastases occur; to the fact that the first symptoms frequently are referred to some other structure, such as the neck, eye or ear; that the area is not as accessible for examination; to the great variations in the appearance of the islands or masses of lymphoid tissue in the nasopharynx that may be considered "within the limits of normal," and to the difficulty in obtaining satisfactory and representative biopsy specimens. In view of the excellent results obtained with the smear technic of Papanicolaou and Traut in the detection of cancer cells in various secretions, it was decided to use this technic in the diagnosis of exfoliative lesions of the nasopharynx. After reviewing the results obtained in 53 visible lesions of mouth, tonsils and larynx, the authors present their experiences in 85 cases in which nasopharyngeal smears were made. The results obtained with the smear technic were excellent, but it is not a substitute for biopsy. A positive smear makes it necessary to search for the source of the malignant cells. It is a time-consuming procedure that demands painstaking attention to detail. This is one reason why it will not become a routine laboratory procedure. Accurate diagnosis can only be made by a cytologist familiar with the area, but a well trained technician can screen out the unquestionably negative slides.

Otologic Effects of Streptomycin.—Wallner reviews the results of testing the cochlear and vestibular functions of 93 patients during treatment with streptomycin. They are divided into two groups on the basis of the dosage. The first group received 2 Gm. per twenty-four hours for four months; group II was given 1 Gm. daily. Audiograms and caloric tests were done before, during and after treatment. One patient with anuria suffered almost total loss of hearing, but no other patient was found to have any hearing loss from the drug. Of the 53 patients in group I, 42 noticed subjective symptoms of dizziness, staggering gait or visual disturbances and 25 had objective evidence of depressed or absent vestibular function. Of the 40 in group II, 18 complained of subjective symptoms and 13 had depressed or absent caloric responses. No return of function was noted later in those without response. They also continued to have subjective complaints, trouble in walking in the dark and dizziness, although these symptoms diminished. These patients were grateful for the improvement in their general condition and did not seem to feel that the vestibular disturbances were too high a price to pay for it.

Anesthesiology, New York

10:247-368 (May) 1949

Tensions of Oxygen and Ether Vapor During Use of Semi-Open, Air-Ether Method of Anesthesia. A. Faulconer Jr. and K. E. Latterell. —p. 247.
Attempts to Prolong and Intensify Spinal Anesthesia by Addition of Ephedrine, Neosynephrin or Epinephrine to Pontocaine-Glucose Solution. W. F. Sergent and R. D. Dripps.—p. 260.
Nupercaine-Glucose for Spinal Anesthesia: Results of Over 5,000 Clinical Administrations. D. A. Roman and J. Adriani.—p. 270.
Clinical Observations on Use of Amidones for Analgesia. B. H. Robbins. —p. 280.
Immediate Effects of Spinal Pontocaine Anesthesia on Blood Volume in Man. S. I. Guest, L. S. Mann and P. W. Searles.—p. 289.
Review of Anesthetic Procedures Employed in 1,016 Major Thoracic Operations for Pulmonary Tuberculosis: Complications and Sequelae. C. Gruenwald and B. C. Sword.—p. 295.
Observations on Cyclopentane as Anesthetic Agent. R. W. Virtue. —p. 318.
*Fatal Massive Pulmonary Collapse During Spinal Anesthesia. I. M. Pallin and M. Goldman.—p. 325.
*Pharmacologic Actions of Intravenous Procaine as Analgesic Agent. R. M. Isenberger.—p. 343.
Postanesthesia Unit in Private Hospital. C. D. Anderson and E. M. Miller.—p. 351.

Fatal Pulmonary Collapse During Spinal Anesthesia.—Pallin and Goldman report 3 cases of fatal massive pulmonary collapse occurring during spinal anesthesia. The first concerned a man aged 59, the second a boy aged 13 and the third a primipara aged 19. At necropsy all 3 showed almost complete bilateral pulmonary atelectasis. Fatal massive pulmonary atelectasis can occur as a complication of spinal anesthesia without the escape of air into the pleural space. Infection, toxemia, high oxygen demand, severe emotional stress and paralysis of the lower thoracic and lumbar sympathetic nerves by spinal anesthesia produce an overactivity of the parasympathetic system which is accentuated by vagus-stimulating manipulations with consequent reflex collapse of the lungs and the circulatory system. In addition to the usual sympathomimetic drug it is thought that patients exhibiting these symptoms and signs should receive a parasympathetic depressant, atropine 1 to 0.6 mg. ($\frac{1}{60}$ to $\frac{1}{100}$ grain), intravenously just before the administration of a spinal anesthetic agent. The authors prefer to avoid the induction of spinal anesthesia in patients manifesting these signs and symptoms, because the work of De Takats, Fenn and Jenkinson indicated experimentally that atropine in high dosage cannot protect the animal, and probably man, against massive pulmonary atelectasis in more than 60 per cent of cases. The authors regard spinal anesthesia as contraindicated whenever it is suspected that a strongly unbalanced autonomic nervous system is operative.

Intravenous Procaine as an Analgesic Agent.—Intravenous injection of procaine hydrochloride produces moderate analgesia, relief of pruritus and increased peripheral circulation in a variety of clinical conditions. The action, according to Isenberger, appears to be localized to the nerve and blood supply of the affected parts. The drug undergoes prompt hydrolysis with rapid disappearance from the blood stream, requiring intravenous infusion in low concentrations. There is some evidence that the metabolites, para-aminobenzoic acid and diethylaminoethanol, retain some of the activity of the injected procaine. Toxic reactions to intravenous procaine depend on the total dose administered, the speed of injection and the concentration of the solution used. Individual idiosyncrasy is not uncommon. In the normal dog perception of pain is not appreciably depressed by maximum tolerated doses of procaine hydrochloride given intravenously. The analgesic, hypnotic and relaxing action of intravenous thiopental (pentothal®) and curare in the dog is reduced by the simultaneous injection of procaine.

Archives of Dermatology and Syphilology, Chicago

59:493-594 (May) 1949

Clinical Use of Antireticular Cytotoxic Serum in Dermatology: Preliminary Report. M. H. Samitz and C. Stritzler.—p. 493.
Factors in Amorphous Penicillin G Influencing Growth of Fungi: I. Effect on Elaboration of Trichophytin by Trichophyton Gypseum. S. M. Peck and K. K. Li.—p. 498.
Calcifying Epithelioma of Malherbe: Report of 15 Cases, with Comments on Its Differentiation from Calcified Epidermal Cyst and on Its Histogenesis. W. F. Lever and R. D. Griesemer.—p. 506.
Pseudo-Ophiasis and Sickle Cell Anemia. T. Cornbleet, H. C. Schorr and S. Barsky.—p. 519.
Relative Allergenicity of Standard and Supposedly Hypoallergenic Nail Polishes. E. Edelson.—p. 522.
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Sturge-Weber Syndrome. S. M. Bluefarb.—p. 531.
*Pigmentary Disturbance Following Exposure to Monobenzyl Ether of Hydroquinone. E. T. Bernstein and P. M. Sachs.—p. 542.
Letterer-Siwe Disease. S. E. Sweitzer and C. W. Laymon.—p. 549.
Soap, and Soap as Vehicle for Medicaments. H. Sharlit.—p. 560.
Nodular Subepidermal Fibrosis (Dermatofibroma Versus Histiocytoma). P. L. Renticrs and H. Montgomery.—p. 568.
New Official Classification of Leprosy. O. Canizares.—p. 584.

Pigmentary Disturbance After Exposure to Monobenzyl Ether of Hydroquinone.—Bernstein and Sachs report the cases of 3 Negroes employed in the manufacture of rubber dolls and of a white man exposed to neoprene, a synthetic rubber-like plastic. Monobenzyl ether of hydroquinone was the antioxidant incorporated in the rubber to which these persons were exposed in handling the unfinished dolls or gloves. None of the patients had had an eruption or pigmentary disturbance preceding the disorder. In all cases negative reactions followed patch tests with substances to which the patients were exposed, including the rubber itself. Positive reactions were obtained with monobenzyl ether of hydroquinone. The 3 Negro patients exhibited depigmentation, but the white man had hyperpigmentation. Six other patients with similar involvement were seen in the course of a routine inspection of the manufacturing plant. The authors know of several patients with this dermatosis who are under the care of other physicians. This indicates the relatively high frequency of this dermatosis. Nonoccupational origins of this depigmentation include leukoderma of the axillas following the use of rubber shields and loss of pigment on the chin after contact with a rubber dam used in dental work. Elimination of contact with the rubber was followed by restoration of the pigment. Pigmentary changes may also involve the adnexa of the skin. One patient observed a loss of hair on the forearms, and another noted that the hair on the forearms changed to a lighter color.

Archives of Ophthalmology, Chicago

41:527-658 (May) 1949

*Persistence and Hyperplasia of Primary Vitreous; Retrolental Fibroplasia—Two Entities. A. B. Reese.—p. 527.
*Histopathologic Aspects of Retrolental Fibroplasia. B. A. Klien.—p. 553.
Divergence Insufficiency as Practical Problem. L. W. Oaks.—p. 562.
Early Photograph of von Helmholtz with Explanatory Letter. J. C. Aub.—p. 570.
Production of Cataract in Rats by Beta-Tetralol and Other Derivatives of Naphthalene. O. G. Fitzhugh and W. H. Buschke.—p. 572.
Use of Antihistaminic Drugs in Control of Atropine Dermatitis and Conjunctivitis. F. B. Fralick and R. D. Kiess.—p. 583.
Choroidal Metastasis of Testicular Chorionic Epithelioma: Report of Case. G. K. Kambara.—p. 587.
Voluntary Dissociations of Accommodation and Convergence Faculty: Two Observations. C. K. Barnes.—p. 599.
Surgical Approach to Inferior Oblique Muscle. W. F. Johnson.—p. 607.
Studies of the Eye with Radiosodium Autographs. L. von Sallmann, T. C. Evans and B. Dillon.—p. 611.
Treatment of Pediculosis Ciliaris with Anticholinesterase Agents: Report of Case. D. G. Cogan and W. M. Grant.—p. 627.
Intravitreal Use of Streptomycin. R. E. Shoemaker.—p. 629.

Hyperplasia of Primary Vitreous.—Reese reports 202 cases of blindness in infants, 128 of which have occurred in the past three years. From the examination made with the patients under general anesthesia this blindness may be considered as due to two different conditions, "persistence and hyperplasia of primary vitreous" in about 10 per cent of the author's cases and "retrolental fibroplasia" in about 90 per cent of the cases. Hyperplasia of the vitreous usually occurs in full term infants, and it generally affects only one eye. Retrolental fibroplasia usually affects both eyes and is characteristically seen in premature infants. Both conditions have in common the persistence of the primary vitreous as the basic congenital lesion, but there is an important difference. In persistence and hyperplasia of the vitreous, the primary vitreous remains as a whole and the secondary vitreous forms. The primary vitreous occupies its normal position in a funnel-shaped fashion back of the lens; thus there has been merely a persistence of the primary vitreous with hyperplasia. In retrolental fibroplasia only a portion of the primary vitreous remains in the region of its base; this persistent primary vitreous is adherent to a portion of the inner layer of the optic cup. As the secondary vitreous forms, it tends to compress and isolate the primary vitreous. This occurs everywhere but in the region where the adhesions have taken place, and here the retina becomes detached. Eyes with hyperplastic vitreous have the potentiality of vision, because the retina is in situ and seems to contain all its cellular elements. Excision of tissue back of the lens was performed on 11 eyes with hyperplastic vitreous. In 3 cases there has been objective improvement in that the pupil has been sufficiently cleared to permit a view of the details of the fundus. An opinion regarding the visual results must be reserved because of the age of the patients. The operation was well tolerated, and no eye has been made worse. Complete failures resulted from surgical intervention on eyes with retrolental fibroplasia.

Retrolental Fibroplasia.—Klien reports the histologic changes in 3 eyes with retrolental fibroplasia in 3 premature infants aged 3½, 10 and 6½ months. Angioblastic overgrowth of the primary vitreous in response to some disturbance as yet unknown may occur at any stage of gestation after formation of the primary vitreous has started. Depending on this time element, the retina may be involved in various ways and different microscopic pictures of retrolental fibroplasia may be produced. In case 1, occurring in the primary vitreous before the 13 mm. stage, these angiomas by invading the retina prevented primary coaptation of the retina and formation of the secondary vitreous. An inflammatory lesion need not be assumed to explain the firm attachment between primary vitreous and retina in this case. Case 2 illustrates a different and apparently more frequently encountered type of retrolental fibroplasia in which the shreds of retina still adherent to the choroid indicate a true retinal detachment and not a failure of primary retinal coaptation, as in case 1. Once the full picture of retrolental fibroplasia has developed, hemangiomas may become lost within the shrinking fibrous tissue. The proliferated pigmented and nonpigmented epithelial cells of the ciliary body may be difficult to demonstrate in histologic preparations of tissue in long-standing cases of retrolental fibroplasia.

Archives of Physical Medicine, Chicago

30:263-356 (May) 1949. Partial Index

Functional Testing and Training in Physical Medicine. R. L. Bennett.—p. 263.
Functional Improvement Produced by Resistive Exercise of Quadriceps Muscles Affected by Poliomyelitis. E. M. Krussen Jr.—p. 271.
*Preliminary Report on Treatment of Anterior Poliomyelitis with Exercise and Curare. W. D. Paul and O. A. Couch Jr.—p. 277.
Kinesiologic Electromyography: III. Deltoid. L. J. Yamshon and W. Bierman.—p. 286.
Simple Pressure Gauge for Measured Palpation in Physical Diagnosis and Therapy. O. Steinbrocker.—p. 289.

Exercise and Curare in Anterior Poliomyelitis.—Paul and Couch deduce from animal experimentation that early muscle use is the best means of promoting recovery from peripheral nerve injury. The patients whom they treated were divided into three groups. In group 1, 21 patients received the routine Kenney treatment, including hot packs and tendon stimulation plus stretching. At the time of admission 7 patients of group 2 had varying degrees of stiffness but no paralysis. They were treated by stretching alone, without the use of curare or hot packs. These patients made a rapid and uneventful recovery. In group 3, 26 patients were treated with stretching and curare but received no hot packs. Eleven of these had pain and tightness but no paralysis, the other 15 had paralysis. The most important part of the early treatment is the use of exercise or stretching to relieve tightness and pain. When pain makes it impossible to carry out the desired range of motion administration of curare to the patient makes it possible. Those treated with hot packs and stretching required nine to one hundred and fifty days to overcome stiffness and pain. The patients with mild disease requiring only stretching were relieved in two to ten days. The group treated by stretching, aided by curare, was relieved of stiffness and pain in two to seventeen days, except for 2 patients who were not properly stretched. Curare was used only as an aid in carrying out the most important part of the treatment, physical therapy. Excessive doses of the drug may obliterate the resistance felt during stretching, and under these conditions stretching might result in muscle injury.

Blood, New York

4:403-696 (May) 1949. Partial Index

Chemistry and Functioning of Mammalian Erythrocyte. S. Granick. —p. 404.
Blood Carbonic Anhydrase Activity in Anemia, with Note on Polycythemia Vera. H. D. Lewis and M. D. Altschule.—p. 442.
Zinc Content of Whole Blood, Plasma, Leukocytes and Erythrocytes in Anemias. B. L. Vallee and J. G. Gibson II.—p. 455.
Heinz Body Phenomenon in Erythrocytes: Review. S. H. Webster. —p. 479.
Studies on Destruction of Red Blood Cells: V. Irreversibly Sickled Erythrocytes: Their Experimental Production in Vitro. Shu Chu Shen, E. M. Fleming and W. B. Castle.—p. 498.
Ovalocytosis Associated with Sickle Cell Trait. R. S. Fadem.—p. 505.
Blood and Bone Marrow in Patients with Cirrhosis of Liver. L. Berman, A. R. Axelrod, T. N. Horan and others.—p. 511.
Evaluation of Sternal Aspiration as Aid in Diagnosis of Malignant Lympomata. T. Cooper and C. H. Watkins.—p. 534.
Bone Marrow Regeneration in Experimental Benzene Intoxication. B. Steinberg.—p. 550.
Glycogen in Human Blood Cells. R. P. Gibb and R. E. Stowell.—p. 569.
Histochemical Study of "Acid" and "Alkaline" Phosphatase Distribution in Normal Human Bone Marrow Smears. M. Rabinovitch and D. Andreucci.—p. 580.
Production of Charcot-Leyden Crystals from Eosinophils with Aerosol Ma. W. W. Ayres.—p. 595.
Eosinophilic Leukemia: Report of Case with Autopsy Confirmation; Review of Literature. T. S. Evans and R. R. Nesbit.—p. 603.
Megakaryocytes in Normal and in Thrombocytopenic Individuals, with Introduction of New System of Differential Count for Megakaryocytes. V. de la Fuente.—p. 614.
Platelet Thrombosis in Human Hemostasis: Histologic Study of Skin Wounds in Normal and Purpuric Individuals. H. D. Zucker.—p. 631.
Effect of Parenteral Injection of Epinephrin on Leukocyte Counts in Normal Subjects and in Patients with Addison's Disease. J. L. Gabrilove, M. Volterra, M. D. Jacobs and L. J. Soffer.—p. 646.
Studies of Blood Passed Through Artificial Kidney. N. K. M. de Leeuw and A. Blaustein.—p. 653.

Bulletin of Johns Hopkins Hospital, Baltimore

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Human Conjunctivitis Due to Newcastle Virus in the U. S. A. M. W. Freymann and F. B. Bang.—p. 409.
Tremor and Changes in Reflex Status Produced by DDT in Decerebrate, Decerebrate-Decerebellate and Spinal Animals. R. B. Bromiley and P. Bard.—p. 414.
Constant Degree of Anoxemia Obtained by Administration of Gas of Variable Oxygen Concentration. R. Penneys, C. B. Thomas and R. L. McLean.—p. 430.
*Treatment of Acute Brucellosis with Aureomycin. M. S. Bryer, E. B. Schoenbach, R. M. Wood and P. H. Long.—p. 444.
Experimental Klebsiella Meningitis Treated with Intrathecal and Intramuscular Streptomycin. G. Zubrod.—p. 461.
*Prevention and Treatment of Motion Sickness: I. Seasickness. L. N. Gay and P. E. Carliner.—p. 470.

Aureomycin in Brucellosis.—Bryer and co-workers tested the sensitivity in vitro to aureomycin of multiple strains of Brucella, including Brucella abortus and Brucella suis. Results showed that these organisms are sensitive to the action of the antibiotic. Growth of eleven strains of Brucella were completely inhibited by 0.25 to 2.0 micrograms of aureomycin per cubic centimeter of medium after forty-eight to seventy-two hours of incubation. Five male patients between the ages of 37 and 53 with blood cultures positive for Brucella organisms were treated with aureomycin. In all but 1 patient, the initial treatment consisted of 2,400 to 3,000 mg. of the drug by mouth. Supplemental intramuscular injections of 40 mg. of aureomycin every six hours were given to 4 patients. The total dose of the antibiotic varied from 6.7 to 35.25 Gm. Treatment was continued experimentally for approximately two weeks, and the dosage was usually reduced when the patient became afebrile. The laboratory and clinical observations in these cases suggest that aureomycin is an effective chemotherapeutic agent in this disease. All patients became afebrile and were improved within forty-eight to seventy-two hours after the start of treatment. When palpable, the liver and spleen receded during treatment, and further evidence of active disease was not observed. Relapses did not occur during follow-up periods of two to eight months. The only toxic reaction associated with oral administration of aureomycin was occasional, transient nausea. This was relieved by aluminum hydroxide preparations. The intramuscular injection of the drug, even when dissolved in 1.0 per cent procaine hydrochloride, produced local pain.

Prevention and Treatment of Seasickness. — Gay and Carliner studied seasickness in 1,366 soldiers carried from New York to Bremerhaven on a 13,000 ton Army transport ship. The voyage began on Nov. 27, 1948 and terminated after a rough passage on December 7. Four compartments 3E, 3F, 4E and 4F were set aside for the study of 485 men assigned to these compartments and subjected to the same motion of the sea. Half the men were given dramamine® (beta-dimethylaminoethyl benzohydryl ether 8-chlorotheophyllinate) or a placebo at the time of the departure from New York harbor; the other half were given dramamine® or a placebo two to twelve hours after the onset of symptoms of seasickness. Adequate control groups were given a placebo. The dose of dramamine® was 100 mg. every five hours and before retiring. The drug prevented seasickness in all but 2 men of 134 who occupied compartment 3E; the placebo failed to relieve the symptoms in all controls who experienced true seasickness in compartment 3F. This control group of 34 men obtained complete relief of symptoms within one hour after the first dose of dramamine® was administered. The drug gave complete relief to 14 men in compartment 4E who had symptoms three or more hours after the transport left New York. A placebo failed to relieve 14 men in compartment 4F, but these men obtained complete relief one-half hour after dramamine® was substituted for the placebo. Nineteen men who experienced symptoms three or more hours after the transport left New York recovered while receiving a placebo. These men required no medication during the last seven days of the voyage. Among 881 men who occupied other compartments of the ship, 195 had severe seasickness. Of these 187 derived complete relief one-half hour after the administration of dramamine.® During the ten days' voyage dramamine® was given to 389 patients with seasickness. Of these, 372 were completely relieved within one hour after the first dose of 100 mg. of the drug. Seventeen patients derived only partial or no relief. Results suggest that dramamine® is a powerful, nontoxic, prophylactic and therapeutic drug which can be used to control the symptoms of seasickness. The drug may be taken by mouth or may be administered rectally. No untoward side effects were noted with the standard dose of 400 mg. in twenty-four hours.

Bulletin New York Academy of Medicine, New York

25:271-332 (May) 1949

Advances in Treatment of Malignant Disease. C. P. Rhoads.—p. 271.
Results of Operations for Hyperparathyroidism. W. B. Parsons.—p. 285.
Therapeutic Role of Procaine and Its Derivatives. E. A. Rovenstine and E. M. Papper.—p. 298.
Treatment of Bell's and Other Palsies. W. Bierman.—p. 307.
Recent Advances in Domain of Anti-Histamine Substances: Phenothiazine Derivatives. B. N. Halpern.—p. 323.

25:333-400 (June) 1949. Partial Index

*Topectomy: Surgical Indications and Results. J. L. Pool, R. G. Heath and J. J. Weber.—p. 335.
Therapy of Asthma with Reference to Its Psychodynamic Pharmacology. H. A. Abramson.—p. 345.
Medicine Under Mussolini. M. Volterra.—p. 364.

Topectomy. — Pool and co-workers performed topectomy involving bilateral removal of the rostromedial portion of each frontal lobe, believed grossly to represent the approximate region of Brodmann's areas 9 and 10, on 54 mental patients, 36 with schizophrenia and 18 with other mental disturbances such as obsessive-compulsive neurosis and depressions that do not respond to the usual types of treatment. Good results were obtained in 7 schizophrenic patients. Significant improvement resulted in 2 patients with involutional depression, 3 with obsessive-compulsive neurosis and 2 in the manic-depressed state. Of these 14 patients the wage earners are back at work, one as an accountant, another as a business man and others as secretaries and writers. Others are at home and capable of doing housework but not of earning their living. Twenty-three patients manifested some improvement and 17 showed no improvement. The obsessive-compulsive states and certain forms of depression profit most by topectomy. The deteriorated and deeply regressed schizophrenic subject and the psychopathic person apparently profit the least. Results compared favorably with those of lobotomy, and there were few of the personality disturbances that may follow prefrontal lobotomy. Postoperative complications of topectomy included temporary incontinence in about one third of the cases. Convulsive seizures occurred in 5 patients, all controlled by appropriate medication; 2 patients with postoperative hematoma were successfully treated, and 1 patient with peripheral neuritis improved by appropriate treatment. The operative mortality rate has been zero. Removal of about 30 Gm. of cortex from each frontal lobe seems to be the average effective measure. A quantitative factor is important in frontal lobe operations of this type. The qualitative or anatomic factor is also important; interruption of the thalamocortical projections seems to be vital in reducing the anxiety underlying mental states.

California Medicine, San Francisco

70:*379-444* (May) *1949*

*Blood Transfusions and the Rh Factor. P. G. Hattersley.—p. 379.
Head Retraction Reflex. R. Wartenberg.—p. 382.
Heart Disease as Complication of Pregnancy, with Emphasis on Indications for Recommending Therapeutic Abortion or Avoidance of Conception. J. J. Sampson.—p. 383.
Surgical Treatment of Patent Ductus Arteriosus. J. C. Jones.—p. 391.
Substernal Goiter and Pulmonary Emphysema. E. Phillips and S. A. Levine.—p. 394.
*Results of Medical and Surgical Management in Ten Cases of Congenital Megacolon. L. A. Yeazell and H. G. Bell.—p. 398.
Dysphasia of the Hip: Factor in Development of Static Osteoarthropathy. J. Levitin.—p. 401.
Clinical Application of Electrokymography. F. G. Gillick and W. F. Reynolds.—p. 407.
The Papanicolaou-Traut Method of Cancer Diagnosis: Its Use as Routine Pathologic Laboratory Procedure. S. Lindsay.—p. 413.
Contagious Ecthyma in Man. E. H. Gray.—p. 417.

Blood Transfusions and Rh Factor.—Hattersley reports that the first infant of a woman aged 25 was born at term and appeared normal but rapidly exhibited intense jaundice and died on the second day. A second pregnancy two years later resulted in a stillborn hydropic fetus. Laboratory tests showed that the patient's blood was group A, Rh negative, and the serum contained hyperimmune antibodies of Rh_0. Her husband was Rh positive. The history revealed that as a girl this woman had received a series of transfusions of blood for anemia. When Rh-negative persons are given transfusions of Rh-positive blood, more than 50 per cent are sensitized to the Rh_0 factor. This case illustrates the fact that such sensitization of female children may be the cause of hemolytic disease in their offspring many years later. The second case reported by the author is that of an Army officer aged 48 who received his first transfusion when injured in the Philippines. Six months later he received from the blood bank 500 cc. of whole blood prior to surgical repair of his injuries. Due to a clerical error in the laboratory he had been recorded as Rh positive, although he actually had not been Rh-typed at all. The patient was transfused with blood from a group A, Rh-positive donor but did not present any immediate untoward reaction. The error was discovered two hours later, and it was determined that the patient was actually Rh negative. The patient's serum was brownish; it appeared to contain not only an increase in bilirubin but free hemoglobin. Rh-positive cells could not be found in the specimen. It appeared that the transfused cells had been completely hemolyzed. The only signs were hemoglobinuria, low grade jaundice, urobilinogenuria and a rising Rh antibody titer. The patient had been sensitized six months previously by the single transfusion. The dangers of Rh sensitization can be avoided by routine Rh-typing of all prospective recipients of blood, whether male or female, and by giving only Rh-negative blood to those who are Rh negative.

Congenital Megacolon.—After a thorough trial of medical management, Yeazell and Bell treated 10 of 20 patients with megacolon, 8 boys and 2 girls between the ages of 2 and 13 years, by either partial colectomy or resection of the entire colon down to the rectosigmoid junction. Follow-up for two to twelve years revealed that 5 of the 10 patients were 100 per cent relieved and 1 was 75 per cent relieved. Three were entirely well a few months after surgical intervention but have not been heard from since. The youngest patient, aged 2 years, died of peritonitis on the sixteenth postoperative day. In 4 of the patients on whom lumbar sympathectomy was performed this operative measure gave partial, temporary or no improvement. Of the 10 patients without operative treatment, several have been lost to follow-up; some are doing well on medical treatment, 1 died in early infancy and resection is being considered in 2. For children with congenital megacolon the authors recommend first a thorough trial of medical treatment, consisting of diet, vitamins, drugs and enemas. This should be started as soon as the diagnosis has been made, in an attempt to prevent the distention and hypertrophy of the bowel from progressing. If distention remains after a reasonable trial period and if the child is not gaining weight adequately, requires repeated hospitalization and is aged 3 years or more, then resection of the affected portion of the colon is indicated. The operative risk has been somewhat reduced with better supportive measures and chemotherapy. Since infants and extremely young children do not stand surgical operation on the colon as well as older children, the decision to operate should take into consideration the age of the patient.

Canadian Journal Public Health, Toronto

40:193-240 (May) 1949

*Wartime Diphtheria Experience in the Royal Canadian Air Force in Relation to Use of Diphtheria Toxoid. A. H. Sellers, G. D. Caldbrick and J. B. Hardie.—p. 193.
Pre-Marital Health Examinations in Saskatchewan: Problems and Results. H. S. Doyle.—p. 200.
Reorganization of the Health and Welfare Division of the Dominion Bureau of Statistics. R. Kohn.—p. 208.
Physical Rehabilitation of Injured Workmen in British Columbia. W. E. Milbrandt.—p. 216.

Diphtheria in Royal Canadian Air Force.—According to Sellers and co-workers the Royal Canadian Air Force introduced a generalized program of Schick testing and immunization of susceptible persons following an outbreak of diphtheria in 1941. They gave two 1 cc. doses of alum-precipitated diphtheria toxoid at an interval of four weeks. Approximately 50 per cent of all adult male personnel were found to be susceptible to diphtheria as judged by results of the Schick test. There were no serious reactions, and it was possible to carry out the program without interfering with military training. The diphtheria immunization program was effective. Outbreaks of diphtheria did not occur despite ample opportunity for infection. One hundred and two recorded cases of diphtheria or suspected diphtheria occurred among male Royal Canadian Air Force personnel during the period September 1941 to December 1945. Of these 102 cases, 16 occurred among men who had been posted overseas before the immunization program was in full operation. Of the remaining 86 cases which occurred after the Schick test and immunization with toxoid were required, 30 occurred in Schick-negative persons and 12 in persons who were Schick sensitive. In the remaining 44 cases the original Schick test was positive; of these, 39 had had two doses of toxoid, 2 had only one dose and 3 had not received toxoid because they had been posted overseas before the inoculation had been given. On the whole, the cases were mild. The incidence of diphtheria among Schick-positive persons who received two doses of the toxoid was almost the same as that among those whose original Schick test was negative. This is clear evidence of the relative efficacy of the use of two doses of alum-precipitated diphtheria toxoid; without inoculation the attack rate would have been many times as great among Schick-positive personnel. Additional evidence is presented to show that there is substantial loss of Schick immunity after one year. A diphtheria immunization program of two doses of alum-precipitated toxoid, three doses of plain toxoid or appropriate doses of any combined antigen, should be accompanied by provision for an annual reinforcing dose.

Canadian J. of Research. Medical Sciences, Ottawa

27:59-158 (April) 1949. Partial Index

Partial Hepatectomy and Resistance to Burns; Variations of Ascorbic Acid and Weight of Adrenals. L. P. Dugal and A. DesMarais.—p. 59.

Lipids of Nervous System During in Vitro Degeneration. A. C. Johnson, A. R. McNabb and R. J. Rossiter.—p. 63.

Factors Affecting Auscultatory Measurement of Arterial Blood Pressures. A. E. Thomson and J. Doupe.—p. 72.

Effect of Amytal on Skeletal Muscle. B. E. Riedel and M. J. Huston.—p. 81.

Gastric Response of Man to Acid Test Meal. G. E. Bermak and J. Doupe.—p. 90.

Acetylcholine and Neuronal Activity. D. B. Tower and D. McEachern.—p. 105.

Content and Characterization of Cholinesterases in Human Cerebrospinal Fluids. D. B. Tower and D. McEachern.—p. 132.

Some Effects of Diisopropyl Fluorophosphate (DFP) and Fluoroacetate on Central Nervous System. A. Kelen and D. McEachern.—p. 146.

Cancer Research, Baltimore

9:257-320 (May) 1949

Sex Hormone Secretion by Tumors of Adrenal Cortex of Mice. M. J. Frantz and A. Kirschbaum.—p. 257.

Special Condition of Interphase Nucleus in Normal and Cancerous Cells. E. U. Green.—p. 267.

Development of Leiomyomas in Female Rats with Endocrine Imbalance. C. A. Pfeiffer.—p. 277.

Transplantable Mouse Lymphosarcoma T 86157 (MB) Studied In Vivo, In Vitro and at Autopsy. W. M. de Bruyn, R. Korteweg and E. K. van Waveren.—p. 282.

Human Sebum as Vehicle for Methylcholanthrene. A. Plaut and H. Sobel.—p. 294.

Effects of Phosphate Bond Energy on Nucleic Acid Stability in Tumor Homogenates. G. A. LePage.—p. 297.

Intraocular Transplantation of Malignant Lymphomas of Mouse, Dog, and Man in Heterologous Species. C. C. Lushbaugh and P. E. Steiner.—p. 299.

Amino Acid Composition of Fibrosarcoma and Its Normal Homologous Tissue in the Rat. M. S. Dunn, E. R. Feaver and E. A. Murphy.—p. 306.

Glycolytic Enzyme Inhibitor Therapy in Human Malignant Neoplasia. M. M. Black, I. S. Kleiner and H. Bolker.—p. 314.

Journal of Neurosurgery, Springfield, Ill.

6:187-268 (May) 1949

Intrathecal Alcohol in Treatment of Spastic Paraplegia. I. S. Cooper and T. I. Hoen.—p. 187.

Extradural Cerebellar Hemorrhage: Review of Subject and Report of Case. F. M. Anderson.—p. 191.

Unilateral Hydrocephalus Resulting from Occlusion of Foramen of Monro: Complication of Radical Removal of Brain Abscess. E. Alexander Jr. and E. H. Botterell.—p. 197.

Further Studies on Treatment of Experimental Hydrocephalus: Attempts to Drain Cerebrospinal Fluid into Pleural Cavity and Thoracic Duct. F. C. Ingraham, R. A. Sears, R. P. Woods and O. T. Bailey.—p. 207.

Intracranial Aneurysms: I. Some Clinical Observations Concerning Their Development. R. C. Bassett.—p. 216.

Role of Complete Cerebral Angiography in Neurosurgery. R. Raney, A. A. Raney and J. M. Sanchez-Perez.—p. 222.

New Operation for Treatment of Communicating Hydrocephalus: Report of Case Secondary to Generalized Meningitis. D. D. Matson.—p. 238.

*Actinomycotic Brain Abscess: Complete Excision with Recovery. R. C. Schneider and R. W. Rand.—p. 255.

Excision of Actinomycotic Brain Abscess.—Schneider and Rand report the case of a man, aged 45, with an actinomycotic abscess of the brain, of probable thoracogenic origin, which was treated successfully by surgical excision combined with antibiotic therapy. The patient received a total dosage of 60 Gm. sulfadiazine intravenously during the first ten postoperative days. The drug was then administered orally, 1 Gm. daily, a total dose of 258 Gm. Penicillin was administered intrathecally for the first four postoperative days in doses of 50,000 units daily. He also received 40,000 units parenterally every three hours, a total dosage of 4,440,000 units penicillin. After his transfer to another hospital an additional 1,920,000 units penicillin were given plus aerosol penicillin four times daily. It is possible that the communication of the abscess with the ventricular system, allowing the intrathecal penicillin to come in direct contact with the contaminated area, was an important factor in this case. Aerosol penicillin was of great value in diminishing the patient's profuse expectoration of tenacious sputum and may have favorably influenced the primary lung lesion. As long as the pulmonary focus remains, extension to other parts of the body may occur, and therefore a pulmonary lobectomy seems indicated.

Journal of Pediatrics, St. Louis

34:529-662 (May) 1949

Vitamin B_{12} Therapy in Megaloblastic Anemia of Infancy. A. Z. McPherson, U. Jonsson and R. W. Rundles.—p. 529.

Glycogen Disease of Liver with Report of Case. W. J. Matheson.—p. 537.

*Influence of Acute Infection upon Course of Allergy in Children: Some Clinical Observations. B. F. Feingold.—p. 545.

Hyaluronidase in Pediatrics. J. Schwartzman.—p. 559.

Associated Facial and Intracranial Hemangiomas. D. F. Downing and M. B. Kreidberg.—p. 564.

Cyanosis in Premature Infants Due to Aniline Dye Intoxication. B. M. Kagan, B. Mirman, J. Calvin and E. Lundeen.—p. 574.

Studies on Antibiotics in Cerebrospinal Fluid: I. Inhibitory Effect of Normal Cerebrospinal Fluid on Antibacterial Action of Streptomycin. R. G. Jordan Jr. and F. S. Hill.—p. 579.

Congenital Sarcoma. M. L. Dreyfuss.—p. 583.

*Cirrhosis of Liver in Children: Clinical and Pathologic Study of 40 Cases. P. D. Keller and W. L. Nute Jr.—p. 588.

Thephorin: Clinical Results in Allergic Children. S. J. Levin and S. S. Moss.—p. 616.

Influence of Acute Infection on Allergy.—According to Feingold an acute infection in an allergic child may produce one of two distinct types of pattern for his allergy, depending on the nature of the infection. The first pattern is observed in association with pertussis and the viral infections including measles, chickenpox, mumps, Kaposi's disease and epidemic virus infections. In these diseases the symptoms of allergy are aggravated during the period of invasion or the prodromal stage; at the peak of the illness the child's allergy is at a lower level than he ordinarily experiences; with convalescence there is a recrudescence of the allergy. The second pattern is observed in association with acute infections of the upper part of the respiratory tract. In these infections there is no apparent change in the allergy during the period of invasion, but at the height of the infection there is an aggravation of the allergy. As the infection subsides, the symptoms of allergy improve without any specific therapy directed toward the allergy. The group of diseases which produce the first pattern usually confer an active immunity after a single attack and their blood picture is that of leukopenia, with the exception of pertussis, which evokes lymphocytosis. The infections which produce the second pattern confer no immunity and call forth polymorphonuclear leukocytosis. The improvement in clinical allergy by the one group of infection and the aggravation of clinical allergy by the second type of infection may suggest some studies in immunology to explain the variation in the allergic response. Eleven illustrative cases of 7 boys and 4 girls, between the ages of 14 months and 10 years with eczema, asthma and allergic rhinitis are reported.

Cirrhosis of the Liver.—Among 82,866 admissions to the St. Louis Children's Hospital there was a total of 40 cases of cirrhosis, 31 confirmed by autopsy and 9 proved by laparotomy with biopsy of the liver. Cirrhosis in children is rare, but not so rare as has been supposed. Defined as a diffuse fibrosis of the liver it can be brought about in a variety of ways, some of which depend on inheritance and some on major derangement in some other organ system. Keller and Nute classified the disease in these 40 cases according to causes. There were 8 cases of obstructive biliary cirrhosis which is due almost always to congenital anatomic anomaly. Clinically it is distinguished by an obstructive jaundice in the newborn infant and pathologically by interlobar fibrosis, bile stasis and moderate inflammatory infiltration. Eleven patients had nodular cirrhosis, which develops in childhood rather than in infancy and is insidious in onset. Jaundice and hepatosplenomegaly are the most constant observations. The atrophic stage is rare. The liver shows extensive perilobular fibrosis, focal regeneration and mononuclear cell infiltration without bile stasis. Diffuse fibrosis of the liver, in addition to the usual clinical and pathologic findings, was observed as a rare sequela of erythroblastosis fetalis in 5 cases. Congestive cirrhosis is the result of repeated severe passive congestion of the liver that alternates with periods of relative compensation. Clinically it is overshadowed by the primary disease of the heart. Six cases of this type are reported. There was only 1 case of postnecrotic cirrhosis of the liver. A variety of toxins are capable of causing necrosis in the liver, which, if it is not too extensive, is followed by fibrotic repair. There seems to be nothing distinctive about this sequence as it occurs in children. Two typical cases of hepatolenticular degeneration are described. So far as the liver is concerned, they are indistinguishable from ordinary nodular cirrhosis.

Kansas Medical Society Journal, Topeka

50:217-264 (May) 1949

Papanicolaou Test in Cancer Control Program. W. E. Brown, J. T. Bradbury and O. F. Kraushaar.—p. 217.
Cleft Lip and Cleft Palate Reconstruction: Manifold Problem. A. E. Hiebert.—p. 222.
Liver Function in Neuropsychiatric Patients as Determined by Hippuric Acid Test. T. L. Foster.—p. 226.
Report of Case of Ringworm of Scalp in an Adult. D. B. Morgan. —p. 231.

Michigan State Medical Society Journal, Lansing

48:409-520 (April) 1949

Michigan Cancer Detection Center Survey: Report by the Cancer Control Committee.—p. 441.
The Hillsdale Plan for Tumor Detection: Plan of Organization and Report of First Year's Experience. By Cancer Control Committee. —p. 445.
Carcinoma of the Breast. J. E. Cooper.—p. 449.
Radical Surgery for Advanced Pelvic Cancer. A. Brunschwig.—p. 451.
Attempts at the Chemotherapy of Cancer. S. P. Reimann and E. T. Nishimura.—p. 453.
Carcinoma of Upper Stomach and Thoracic Esophagus. A. Large, J. L. Posch and D. Dolese.—p. 458.
Radiation Effects on the Skin and Their Treatment. A. R. Woodburne and O. S. Philpott.—p. 461.
Skin Metastases as Evidence of Visceral Malignancy: Report of 2 Cases. K. M. Vander Velde.—p. 467.
Splenic Neutropenia Associated with Hodgkin's Disease. J. D. Kutsche. —p. 469.
Unusual Spinal Cord Tumors. C. F. List.—p. 471.
Solid Myoma of Uterus: Tumor Comprising Over One-Third of Body Weight. R. A. Stiefel and F. C. Cretsinger.—p. 478.
Treatment of Chronic Nonspecific Prostatitis. J. A. Winter.—p. 480.

Minnesota Medicine, St. Paul

32:449-568 (May) 1949

Proposals for Extension of Medical Care. H. M. Carryer.—p. 473.
Analysis of Electrocardiograms of Ninety-Three Patients with Acute Rheumatic Fever. B. F. Fuller and E. Young.—p. 482.
Skeletal Traction in Treatment of Traumatic Anterior Thoracic Instability. T. J. Kinsella and R. G. Bronson.—p. 486.
*Detection of Early Cancer of Cervix Uteri by the Papanicolaou Method: Analysis of 1,000 Consecutive Cases. K. Ikeda.—p. 488.
Factors in Diagnosis of Squint. V. L. Lindberg.—p. 492.
Perirectal Abscess Producing Symptoms of Generalized Peritonitis. W. C. Bernstein.—p. 496.

Detection of Early Cancer of Cervix Uteri—Ikeda examined 1,093 smears, 80 per cent cervical and 20 per cent vaginal, which were obtained from 1,000 female patients. Cancer cells were detected in 15 cases (1.5 per cent); the disease in 5 of these had been clinically diagnosed either as cancer or suspected cancer. The smear in 1 biopsy-proved case was negative. In the remaining 10 patients (1 per cent), between the ages of 30 to 64, cancer was unsuspected. All were married and multigravid except 1. The most common presenting complaint was intermittent or intermenstrual spotting or bleeding, followed in frequency by vaginal discharge. The cervices of these patients were free of a demonstrable lesion or showed only a minor erosion. The cervical smear seems to yield more positive results than the vaginal in a given series in the hands of the average examiner. Papanicolaou's cytologic method appears to be more sensitive in detecting early preclinical cancer of the cervix than does the conventional biopsy. A positive vaginal or cervical smear should never be ignored. It should be confirmed by one or more additional smears and by biopsy. A negative smear does not exclude cancer. Since the only guarantee for the cure of cancer of the cervix, at the present time, is its earliest possible recognition, since the cytologic technic has satisfactorily demonstrated its greater effectiveness in detecting early or preclinical cervical cancer than any other method known and since the routine biopsy in office practice is neither indicated nor practical, the Papanicolaou method of cytodiagnosis or any of its modifications may profitably be employed in the routine gynecologic practice to aid in the discovery of early cancer of the cervix uteri.

New England Journal of Medicine, Boston

240:703-746 (May 5) 1949

A Decade's Experience in Operation of Group Medical-Care Organization. S. Etkin.—p. 703.
Coarctation of Aorta Associated with Adams-Stokes Syndrome, Complete Heart Block and Bicuspid Calcareous Aortic Valve: Report of Case. R. J. Clark and H. I. Firminger.—p. 710.
Ballistocardiograms in Coarctation of Aorta: Observations Before and After Operation. H. R. Brown Jr., M. J. Hoffman and V. DeLalla Jr.—p. 715.
*Present-Day Status of Fenestration Surgery. L. F. Johnson and H. Silva.—p. 718.
Oral Surgery (Continued). K. H. Thoma.—p. 721.
Osteoid Osteoma of Femur.—p. 728.
Acute Bacterial Endocarditis of Mitral Valve.—p. 730.

Fenestration Surgery.—Johnson and Silva present a study of the results of fenestration surgical treatment, based on their ten years' experience at the Boston University School of Medicine and Massachusetts Memorial Hospitals, on observations made at various other clinics visited and on current literature. The selection of cases suitable for fenestration is an exacting responsibility. They outline the procedure that is followed at the Massachusetts Memorial Hospitals. A table lists the results of novovalis fenestration operations performed in 151 cases between 1942 and 1946. Practical hearing was obtained in 60 per cent of the cases and improved hearing in 26 per cent. In 13 per cent the preoperative hearing level remained, and hearing was worse in the remainder. Thus the likelihood that further impairment in hearing will result from operation is less than 1 per cent. The record of the last two years gives every promise of substantial improvement in the percentage of practical hearing, because of the improved fistula technic.

New York State Journal of Medicine, New York

49:1105-1232 (May 15) 1949

Histamine Iontophoresis in Therapy of Multiple Sclerosis. H. A. Abramson.—p. 1151.
Friedlander Bacillus Pneumonia Treated with Streptomycin. E. E. Benzier, J. Schwartz and M. A. Elias.—p. 1156.
Spa Therapy in Diseases of Skin. E. Neuwirth.—p. 1159.
Clinical Import of Blood Cholinesterase Determinations in Cholinergic Episodes and States in Human. C. Solomon, R. D. Barnard and H. G. Golan.—p. 1163.
Elusive Mental Cases: Indecision. B. Leber.—p. 1167.
Response to Intravenous Typhoid Vaccine in Intractable Status Asthmaticus. M. Fogel.—p. 1170.
Role of Bronchoscopy in Preoperative Diagnosis of Carcinoma of Lung. A. Lambert.—p. 1173.
Treatment of Menopause by Estradiol Pellet Implantation. M. V. Okie. —p. 1175.
Pleural Complications of Staphylococcus Pneumonia. P. H. Guilfoil. —p. 1177.
Treatment of Itching Dermatoses with Ointment Containing Two Per Cent Diphenhydramine (Benadryl Hydrochloride). A. J. Philip. —p. 1179.
Dissecting Aortic Aneurysms. M. Schlachman.—p. 1182.
Toxicity of Sodium Fluoride in Man. M. M. Black, I. S. Kleiner and H. Bolker.—p. 1187.
Nonspecific Reactions in Serologic Tests for Syphilis—Relationship of Vaccinia. V. N. Tompkins.—p. 1189.
Platelet Response to Vitamin B Complex in Newborn Period. L. S. Goldstein.—p. 1191.

North Carolina Medical Journal, Winston-Salem

10:229-292 (May) 1949

Selected Neuro-Ophthalmologic Disorders. H. C. Smith.—p. 230.
Cancer of Large Intestine: Diagnosis and Management. W. B. McCutcheon and R. D. Baxley.—p. 243.
Psychosomatic History Taking. A. C. Randolph.—p. 253.
Improved Autotransfusion. A. G. Brenizer Jr.—p. 257.
Sickle Cell Anemia Complicated by Valvular Heart Disease. G. E. Forbes.—p. 261.
Three Common Orthopedic Problems: De Quervain's Disease, Pulled Elbow, and Morton's Toe. A. T. Hamilton.—p. 267.
Adiposis Dolorosa: Report of Case. W. Spaeth.—p. 269.
Abdominal Pregnancy with Premature Separation of Placenta and Multiple Complications: Case Report. P. E. Simpson.—p. 273.

Physiological Reviews, Baltimore

29:91-194 (April) 1949

Neoplasia in Cold-Blooded Vertebrates. B. Lucké and H. G. Schlumberger.—p. 91.
Transport of Ions Across Cellular Membranes. H. H. Ussing.—p. 127.
Development of Acute Tissue Damage Due to Cold. L. Kreyberg. —p. 156.
Reactions of British Anti-Lewisite with Arsenic and Other Metals in Living Systems. L. A. Stocken and R. H. S. Thompson.—p. 168.

Proc. of Staff. Meet. of Mayo Clinic, Rochester, Minn.

24:245-276 (May 11) 1949

Cytologic Diagnosis of Carcinoma of Esophagus and Cardia of Stomach. H. A. Andersen, J. R. McDonald and A. M. Olsen.—p. 245.
*Myocardial Infarction and Sudden Deaths Following Administration of Pitressin; Additional Electrocardiographic Study of 100 Patients Given Pitressin for Cholecystography. M. D. Mills, H. B. Burchell, R. L. Parker and B. R. Kirklin.—p. 254.
Evaluation of Hyperemia Test for Pregnancy as Routine Clinical Laboratory Procedure: Comparison of Results with Those of 1,000 Consecutive Friedman Tests. A. Albert.—p. 259.
Lymphoblastoma with Signs of Renal Involvement Improved by Roentgen Therapy. H. G. W. Jones, H. M. Odel and W. C. Popp.—p. 264.

Myocardial Infarction and Sudden Deaths Following Administration of Beta-Hypophamine (Pitressin®).—Mills and associates present 2 instances of prolonged myocardial ischemia, 1 of which proved fatal, and 2 sudden deaths in cases in which beta-hypophamine was given as an aid in clearing the upper part of the abdomen of gas to facilitate the interpretation of cholecystograms. Collins and Root made the first report in 1936 on the use of the drug to eliminate intestinal gas during cholecystography. These authors advised that its use be avoided in cases in which the systolic blood pressure is more than 150 mm. or less than 100 mm. of mercury and in cases of coronary sclerosis or cardiac decompensation. The episodes which occurred in the 4 cases pose the question as to the part beta-hypophamine played in the production of severe myocardial ischemia. The dose used for cholecystographic procedures was three-fourths that suggested by Ruskin for a diagnostic test for disease of the coronary arteries, and it was administered intramuscularly rather than intravenously. The authors decided to investigate whether electrocardiograms would show changes following the injection of beta-hypophamine. To evaluate this possibility, electrocardiograms were made in 100 cases before and fifteen minutes after the intramuscular injection of 1 cc. of beta-hypophamine containing 10 pressor units. In all of these cases, cholecystography had been requested, and the drug was administered with the approval of the consultant to facilitate this diagnostic procedure. Examination of the electrocardiograms either failed to disclose any change or revealed very slight changes. The mechanism through which the drug might initiate a severe coronary insufficiency and myocardial infarction is presumed to be a severe coronary vasoconstriction. The authors conclude that as a diagnostic adjunct it should be employed with the utmost discretion.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

70:565-768 (April) 1949. **Partial Index**

Recovery of Psittacosis Virus from Chicks Hatched from Inoculated Eggs. D. J. Davis and J. E. Vogel.—p. 585.
Evaluation of Dubos' Solid Medium Containing Penicillin in Isolation of Tubercle Bacilli. J. W. Smith, J. Humiston, W. P. Creger and W. M. M. Kirby.—p. 589.
Effect of Alloxan Diabetes on Fertility and Gestation in the Rat. J. A. Sinden and B. B. Longwell.—p 607.
Differential Sheep Cell Agglutination Test in Rheumatoid Arthritis. E. Jawetz and E. V. Hook.—p. 650.
Destructive Action of Human Cancer Extracts on Red Blood Cells In Vitro. L. Gross.—p. 656.
Serum Level of Protein Bound Radioactive Iodine (I^{131}) in Diagnosis of Hyperthyroidism. A. S. Freedberg, A. Ureles and S. Hertz. —p. 679.
*Pathogenicity of Bagasse, II. Effect on Rabbits of Prolonged Exposure to Bagasse. B. Gerstl, M. Tager and L. W. Szczepaniak.—p. 697.
Complete Regression of Lymphosarcoma Implants Following Temporary Induction of Riboflavin Deficiency in Mice. H. C. Stoerk and G. A. Emerson.—p. 703.
Effect of Curare on Autonomic Reflexes. C. L. Burstein, A. Jackson and E. A. Rovenstine.—p. 718.
Use of Radiopotassium for Detection of Minute Amounts of Desoxycorticosterone. R. I. Dorfman.—p. 732.
Role of Spleen in Radiation Injury. L. O. Jacobson, E. K. Marks, E. O. Gaston and others.—p. 740.
Proteolytic Activity of Hemophilic Plasma. D. A. Richert.—p. 743.
Transfusion of Leukocytes and Products of Disintegrated Leukocytes. A. S. Weisberger, R. W. Heinle and R. Hannah.—p. 749.

Pathogenicity of Bagasse.—Gerstl and associates say that various factors have been suggested as etiologic agents of bagasse disease, such as the fiber itself, fungi and micro-organisms attached to the fiber and the high silica content. The authors describe experiments on rabbits. They found that the inorganic part of the inhaled bagasse dust produces a tissue reaction which is primarily a foreign body response. It is unlike silicosis and is amenable to healing by resolution. Superimposed on these lesions there occur in animals which are more susceptible to the causative micro-organisms acute bronchiolitic and pneumonic changes which, if sufficiently extensive, may cause death of the animal. A similar combination of etiologic factors seems to be the most plausible explanation of the complex picture of human bagasse disease.

Psychosomatic Medicine, New York

11:69-132 (March-April) 1949

Psychologic Tension and Serum Iodine Levels in Psychiatric Patients Without Evidence of Thyroid Disease. E. B. Brody.—p. 70.
Study of Pituitary-Adrenocortical Function in Normal and Psychotic Men. G. Pincus, H. Hoagland, H. Freeman and others.—p. 74.
Sex-Hormone Relationship in Schizophrenic Men. R. G. Hoskins and G. Pincus.—p. 102.
Use of Dream Analysis in Psychosomatic Research. T. M. French and L. B. Shapiro.—p. 110.
Relation Between Certain Finger Volume Changes, Electroencephalographically Manifested Brain Activity and Psychopathologic Reactions. W. T. Lhamon.—p. 113.
Mental Hygiene in General Hospital. O. Diethelm, C. Binger, H. E. Daniells and others.—p. 119.
Psychogenic Sneezing and Yawning. H. H. Shilkret.—p. 127.

Public Health Reports, Washington, D. C.

64:589-620 (May 13) 1949

*Pertussis and Aureomycin. J. A. Bell, M. Pittman and B. J. Olson. —p. 589.
Simple and Efficient Transport Method for Gonorrheal Specimens. L. R. Peizer, G. I. Steffen and S. Klein.—p. 599.
Diarrheal Disease Control Studies: II. Conical Net for Collecting Flies. P. P. Maier and R. P. Dow.—p. 604.

64:621-656 (May 20) 1949

Current Organization Patterns of Statistical Activities in State Health Departments. D. D. Swinney.—p. 621.
Sickness Absenteeism Among Industrial Workers: Third and Fourth Quarters of 1948. W. M. Gafafer.—p. 641.

Pertussis and Aureomycin.—Bell and associates state that aureomycin hydrochloride given to mice subcutaneously in nontoxic doses not only delayed the time of death but also prevented deaths due to prior intracerebral infection with Hemophilus pertussis. Small doses of the drug given at twelve hour intervals over a period of eight days were more effective than large doses given over a short period. Preliminary clinical trials in 20 cases of pertussis when compared with 380 cases of untreated disease suggest that aureomycin given orally shortens the clinical course of the disease. In only a few, particularly those with early treatment, was the clinical response to aureomycin considered dramatic in the sense that complete recovery immediately followed a few days of treatment. A prompt but gradual diminution in the frequency and intensity of paroxysms was observed in practically all cases. Some difficulty was encountered in ascertaining that specified amounts of the drug were retained by young children with pertussis. No untoward effects resulted from treatment. Aureomycin hydrochloride is effective for treatment of H. pertussis infection in mice and looks promising for treatment of the human disease. Further clinical trials are necessary to establish its value for general treatment of clinical pertussis.

Southern Surgeon, Atlanta, Ga.

15:205-290 (April) 1949

Intracranial Aneurysms. R. Jaeger.—p. 205.
Some Effects of Operation, Anesthesia and Composition of Parenteral Fluids upon Excretion of Water and Salt. C. A. Moyer, F. A. Coller, V. Iob and others.—p. 218.
Surgical Treatment of Malignant Lesions of Colon Complicated by Inflammatory Reaction, Fixation or Obstruction. C. J. Hunt.—p. 248.
Management of Hemothorax. J. A. Moore.—p. 255.
Surgical Management of Cancer of Lower Bowel Without Colostomy. H. E. Bacon and G. D. Vaughan.—p. 270.
Treatment of Some Common Rectal Conditions. J. F. Robertson and C. P. Graham.—p. 283.

15:291-374 (May) 1949

Factors Influencing Selection of Operation for Carcinoma of Lower Portion of Colon and Rectum. C. W. Mayo.—p. 291.
Tumors of Neck. S. F. Marshall and W. F. Becker.—p. 300.
Melanoma. V. H. Price, C. D. Knight and W. R. Mathews.—p. 316.
Plastic Procedures for the General Surgeon. C. C. Trabue.—p. 322.
Cancer of Cervix as Seen in Rural Community. W. H. Cave.—p. 332.
Plastic Repair of Injuries to Male Genitalia. W. G. Hamm and F. F. Kanthak.—p. 339.
Management of Cranial Cerebral Injuries. F. Jelsma.—p. 346.
Incorrect Knot-Tying, Cause for Broken Sutures. S. V. Ward.—p. 354.
Vascular Accidents of Extremities. K. D. Grace.—p. 359.

Southwestern Medicine, El Paso, Texas

29:85-104 (May) 1949

Use of Antibiotics in Surgery. J. E. Rhoads.—p. 88.
Treatment of Facial Lacerations and Diagnosis of Underlying Pathology. W. W. Schuessler and D. N. Steffanoff.—p. 94.

Surgery, St. Louis

25:655-814 (May) 1949

Healing of Wound as Biologic Phenomenon. S. C. Harvey.—p. 655.
*Evaluation of Mixtures of Ossein Gelatin, Hydrolyzed Protein and Glucose in Parenteral Nutrition of Postoperative Patients. C. Riegel, C. E. Koop, C. W. Schwegman and others.—p. 672.
Studies on Burns: III. Effect of Heparin on Circulating Blood Plasma and Proteins in Experimental Burns. E. M. Alrich.—p. 676.
Study of Vehicles and Adjuvants for Sulfonamides and Penicillin. E. J. Pulaski.—p. 681.
*Massive Penicillin Therapy of Abdominal Actinomycosis. G. E. Sanford and R. O. Barnes.—p. 711.
Effect of Temporary Renal Vascular Occlusion on Kidney Function. J. R. Scheibe, E. Giraldi and C. W. Vermeulen.—p. 724.
Dislocations and Fracture-Dislocations of Foot: Transfixion with Kirschner Wires. E. O. Geckeler.—p. 730.
Appendical Calculi: Incidence and Clinical Significance. B. Felson. —p. 734.
Gelatin Sponge in Cardiac Valvulotomy: Report of 2 Cases. J. M. Stallworth and H. G. Smithy.—p. 738.

Ossein Gelatin, Hydrolyzed Protein and Dextrose in Parenteral Nutrition.—Riegel and co-workers point out that ossein gelatin was developed during World War II as a plasma substitute and proved to be remarkably free from toxic or antigenic properties. Although it is one of the few plasma substitutes with nutritional value, it has long been recognized to be an incomplete protein. Its use in conjunction with a hydrolyzed complete protein has been suggested. The authors performed nitrogen balance studies on two groups of 10 patients each, during five day periods following major operative procedures. Both groups were given all their nourishment intravenously, and each patient received approximately 30 calories per kilogram per day and 0.3 Gm. of nitrogen per kilogram per day. Casein or fibrin hydrolysates provided all the nitrogen for the first group, and the average daily nitrogen balance was minus 2.85 Gm. In the second group ossein gelatin was substituted for one-half the hydrolysate, and the average daily nitrogen balance was minus 0.2 Gm. The first group was also compared with 8 patients who received a comparable ration enterally and had an average daily nitrogen balance of plus 0.35 Gm. No difference in efficacy was observed between casein hydrolysate and fibrin hydrolysate in this series. The use of macromolecular gelatin for a part of the nitrogen ration makes possible the use of a solution which is somewhat less hypertonic than is otherwise necessary.

Massive Penicillin Therapy of Abdominal Actinomycosis.—Sanford and Barnes point out that the course of events in 2 cases of severe abdominal actinomycosis indicates that infections of this type may not respond to penicillin therapy in rather large doses (800,000 units a day), sulfonamide drugs, adequate surgical treatment and supportive therapy. These 2 patients received this therapy for eight and nine months, but temporary improvement was followed by progression of the disease. It was then that really massive penicillin therapy was instituted. One patient was given in the course of sixty-seven days 644,480,000 units of penicillin and 156 Gm. of sulfadiazine. The second patient was given in the course of forty-eight days 586,400,000 units of penicillin. Five hundred thousand units of penicillin was given intramuscularly every three hours and 10,000,000 units in 1,000 cc. of isotonic sodium chloride solution was administered daily by slow intravenous drip. Administration of sulfadiazine was continued in doses of 6 Gm. a day. The response to this massive penicillin therapy was dramatic and cure resulted in both patients. The only change in the treatment of these patients was the administration of massive doses of penicillin. Consequently, one may state with certainty that massive penicillin therapy has been responsible for the cures. The apparent cure of an actinomycotic abscess is noteworthy when the high mortality reported for these cases is considered. There have been 11 reported cases with only 1 patient alive after one year, and he had recurrence of the disease. This report confirms the observations of others that massive doses of penicillin are not toxic even when given for relatively long periods. Follow-up studies on the 2 patients revealed cures of one year's duration. The perfect health of the patients indicates a permanent cure.

Texas State Journal of Medicine, Fort Worth

45:183-266 (April) 1949

Every Doctor's Office a Cancer Detection Center. G. V. Brindley. —p. 189.
Results of Treating Carcinoma of Stomach by Gastrectomy. W. Walters and J. Berkson.—p. 191.
Cancer of Rectum and Colon: Analysis of Private Cases, 1926-1946. H. T. Hayes and H. B. Burr.—p. 198.
Synovial Sarcoma and Relatively Benign Synovioma. E. E. Muirhead, L. J. Kreissl Jr. and C. E. Gordon.—p. 202.
Simple Method of Applying Vaginal Radium. I. C. Skinner.—p. 209.
Gastric Rugae. R. P. O'Bannon.—p. 210.

45:267-332 (May) 1949

Nutrition for the Expectant Newborn and Mother. W. F. Guerriero. —p. 274.
Left Sided Approach for Small Bowel Obstructions: Anatomic and Mechanical Improvement. J. P. Barnes.—p. 281.
Mass Photofluorography in Texas. H. E. Smith.—p. 286.
Cod Liver Oil Therapy of Tuberculous Empyema. R. J. Hanks.—p. 290.
Relapsing Tertian Malaria: Diagnosis and Therapy. R. A. Wise.—p. 295.

United States Naval Med. Bulletin, Washington, D. C.

49:407-616 (May-June) 1949. Partial Index

Sarcoidosis: Report of 6 Cases. I. L. Norman and W. Shoemaker. —p. 407.
Experiences with Marrow Nail Operation According to Principles of Kuentscher: Part I. C. Haebler.—p. 423.
*Vagus Neurectomy in Peptic Ulcer: Analyses of 60 Cases. F. H. Johnson and E. A. Kearney.—p. 475.
Chronic Nonspecific Jejunitis. R. B. Green.—p. 488.
Recurrent Acute Pancreatitis: Review of Literature and Report of Case. J. A. Dugger.—p. 498.
Psychiatric Uses of Sodium Pentothal: Experiences in a Forward Area. D. W. Orr.—p. 508.
Myocardial Infarction at the Age of 21: Report of Case. B. C. Jones Jr. and J. H. Strauch.—p. 517.
Syphilitic Osteoperiostitis—Skull, Ribs, and Phalanges: Report of Case. J. W. Metcalfe.—p. 528.
Repositioning of Mandible by Adjustment of Occlusion. S. K. Sarkin. —p. 542.
Primary Carcinoma of the Liver (Hepatoma). H. V. Hippensteel Jr. —p. 556.
Craniopharyngioma: Report of Case. E. N. Barnum.—p. 560.
Urachal Cysts and Sinuses: Discussion and Report of Case. J. J. Zarriello.—p. 567.
Prolapse of Male Genitalia in Frank Breech Presentation: Case Report. J. A. Millspaugh and O. G. Nix.—p. 571.
Angioid Streaks of the Retina: Case Report. A. J. Delaney and A. L. Rhoades.—p. 572.
Spontaneous Mediastinal Emphysema: Report of Case. J. Y. Bradfield and R. B. Shepardson.—p. 576.
Medical Care on Wartime Operating Submarines. I. F. Duff and C. W. Shilling.—p. 580.

Vagus Neurectomy in Peptic Ulcer.—Johnson and Kearney state that they were reluctant to try vagus neurectomy because they were convinced that partial gastrectomy was an excellent operation for the cure of both gastric and duodenal ulcers. They were aware of the difficulties and dangers that are encountered in attempting to resect a large penetrating ulcer of the posterior wall of the duodenum, i. e., possibility of injury to the common bile duct, of blown out duodenal stump, duodenal fistula and peritonitis. It was in just such a case that they performed a vagus neurectomy for the first time. The patient complained of pain for six years and had several episodes of bleeding. The pain had not responded to medical management. A large ulcer of the posterior wall of the duodenum, which had penetrated into the pancreas, was found at operation. Resection of the ulcer was considered dangerous, and rather than perform a gastrojejunostomy or a Finsterer type of partial resection they performed a vagus neurectomy. During the next six weeks this operation was performed on 4 or 5 poor risk patients. The results were so good that the authors were encouraged to extend the use of the procedure. They combined gastrojejunostomy with vagus neurectomy in a large percentage of cases. Of the 60 patients whom the authors treated by vagus neurectomy 2 died; in 46 the results were excellent, in 9 good and in 3 poor. Since the completion of this report, 23 additional patients were treated by vagus neurectomy with the same general results and no deaths.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

22:243-294 (May) 1949. Partial Index

Observations on Ionization Produced by High-Voltage Radiation in Moulded Ionization Chambers with Walls of Various Effective Atomic Numbers. S. M. Aly and C. W. Wilson.—p. 243.
Dynamic Electrometer for Small Condenser Chambers. W. H. Sutherland.—p. 255.
Analysis of Radio-Iodine Uptake and Excretion Curves. T. H. Oddie.—p. 261.
Demonstration of Iron in Cells: Preliminary Note. A. E. Barclay.—p. 268.
Significance of Congenital Lumbo-Sacral Abnormalities. H. W. Gillespie.—p. 270.
Yaws. S. F. Oosthuizen.—p. 276.
Gastric Adenomyosis: Report of Case. R. J. C. Campbell.—p. 284.

22:295-354 (June) 1949. Partial Index

Röntgen-Ray Microspectrographic Investigation of Inflammatory Destruction of Mastoid Bone. A. Engström, C. A. Hamberger and S. Welin.—p. 309.
Observations upon Radiology of Small Intestine in Old Age. H. J. Jungmann and L. Cosin.—p. 325.
Natural History of Malignant Disease. S. Cade.—p. 331.

British Journal of Surgery, Bristol

36:337-456 (April) 1949

Simple Experimental Method of Evaluation for Bassini and Allied Types of Herniorrhaphy. F. S. A. Doran and W. H. Lonsdale.—p. 339.
Treatment of Cavernous Hemangiomas and Cirsoid Aneurysms by Injection of Boiling Water. P. P. Cole and A. H. Hunt.—p. 346.
Spontaneous Paralytic Ileus. W. B. Roantree.—p. 352.
Mesothelioma of Peritoneum: Report of Case and Review of Literature. J. A. Rhind and C. J. E. Wright.—p. 359.
Missile Injuries of Urethra. D. S. Poole-Wilson.—p. 364.
*Carcinoma of Rectum and Anal Canal Treatment with Very High Voltage X-Ray Therapy. I. G. Williams.—p. 376.
*Surgico-Pathological Aspects of Myasthenia Gravis. H. Reid.—p. 381.
Post-Operative Biliary Fistula: Description of New Reconstructive Operation. S. O. Aylett.—p. 387.
Urinary Incontinence Due to Ectopic Ureter. G. F. Langley.—p. 391.
Partial Hepatectomy. R. W. Raven.—p. 397.
Immediate Skin-Graft in Radical Mastectomy: Plea for More Frequent Adoption of this Method. C. Wells and D. Annis.—p. 401.
Athletes' Hernia of Tibialis Anticus Muscles. M. C. Oldfield.—p. 405.
Trichobezoar. A. M. Nussey and A. R. Leask.—p. 408.
Mediastinal Cysts of Gastric Origin: Report of Case B. J. Bickford.—p. 410.
Observations on Bone Lesions in Hodgkin's Disease. P. J. Moir and J. G. Brockis.—p. 414.
Bilateral Aplasia of Vas Deferens. D. Young.—p. 417.
Further Report on Operation of Esophagectomy with Presternal Esophago-Gastrostomy. H. Taylor.—p. 419.
Method of Defunctioning Bladder and Rectum in Advanced Pelvic Carcinoma. K. Powell.—p. 421.

High Voltage Roentgen Radiation for Carcinoma of Rectum—According to Williams the treatment of carcinoma of the rectum by roentgen rays generated at 200 to 250 kilovolts has been abandoned in Britain. In 1937 inquiry into the effect of roentgen rays generated at a million volts was started. The author reviews observations on 192 patients (140 with primary and 52 with recurrent lesions) who were treated with supervoltage roentgen rays to the end of 1946. The patient's general condition must be good to stand a course of treatment which causes severe general and local reactions. All patients experience a general reaction, which persists during the whole four to six weeks of treatment. After the second week reactions in organs lying in the path of the beams may add to the discomfort. There may be bladder reactions with radiation cystitis, and colitis and enteritis with tenesmus and diarrhea. The vagina may become sore. Some damage is done to the blood, and cutaneous reactions occur. Careful planning is of vital importance with supervoltage treatment. Isodose charts must be prepared for every patient, and one must know what dose each part of the irradiated field is receiving. Of 140 patients with primary carcinoma treated with supervoltage roentgen ray therapy, 128 are dead and 12 alive. Six are perfectly well and free from symptoms, 2 have growth probably still present, and the rest are comfortable and free of complications, although treatment was too recent to permit evaluation of results. One patient has a necrosis leading down to the coccyx. Two patients could not be traced, but they presumably died. Of the 52 patients who were treated for carcinoma that recurred after surgical treatment, 25 died within twelve months and 41 were dead within two years; 8 were alive and well from two and one-half to 8 years after treatment. Regression of the primary tumor is more certainly obtained in squamous cell carcinoma of the anal canal than in adenocarcinoma of the rectum. In both sites excellent palliation and prolongation of comfortable life, not merely existence, can be expected from supervoltage roentgen therapy in patients with advanced disease, provided it is still confined to the pelvis. Pain and tenesmus are relieved, bleeding and discharge are arrested, and ulceration heals. Toxic absorption is decreased, and the general well-being of the patient is improved. Although the figures for long term survival are small, they show improvement over those for alternative forms of radiotherapy. The treatment should be confined to cases in which there is reasonable prospect of producing regression of the tumor mass. For patients with advanced disease and infection, colostomy alone is less trying. The author does not believe that the improvement in the effects of these radiations is due to the shorter wavelength of the million volt roentgen rays. It is not a difference in biologic effect; rather, it is due to the increased depth-dose and to the greater accuracy and efficiency.

Myasthenia Gravis.—Reid reports 6 cases of myasthenia gravis in which he removed the thymus or a tumor. Four patients had the disease associated with a so-called persistent thymus, 1 with a malignant thymoma and 1 with an innocent thymoma. The patient with the malignant thymoma, who had severe myasthenia gravis, died after surgical removal of the tumor. The patient with the benign thymoma and severe myasthenia is much improved three months after the operation but has not yet returned to work. Three years after operation, 3 of 4 patients with persistent thymus were back at full work with few or no symptoms. One has had a recurrence and required regular doses of neostigmine.

British Medical Journal, London

1:833-880 (May 14) 1949

Extrathoracic Pain in Cardiovascular Disease. J. L. Lovibond.—p. 833.
Vioform in Treatment of Skin Diseases. I. Martin-Scott.—p. 837.
Topical Use of Vioform in Dermatology. J. Overton.—p. 840.
Disseminated Sclerosis in South Africa: Its Relationship to Swayback Disease and Suggested Treatment. G. Dean.—p. 842.
Use of Procaine Penicillin in Children. J. L. Emery, S. M. Stewart and D. G. H. Stone.—p. 845.
Acute Porphyria and Associated Electrolyte Changes. D. Davies.—p. 846.
Retained Placenta and Post-Partum Hemorrhage. H. L. Sheehan.—p. 849.
Typhoid Treated with Chloromycetin. F. Murgatroyd.—p. 851.

1:881-920 (May 21) 1949

Edward Jenner: The Man and His Work. E. A. Underwood.—p. 881.
Ehrlich's Aldehyde Test for Urobilinogen. T. M. Wilson and L. S. P. Davidson.—p. 884.
Retention of Urine. E. W. Riches.—p. 887.
Ogilvie's Syndrome of False Colonic Obstruction: Case with Post-Mortem Findings. J. A. Dunlop.—p. 890.
Chronic Ileus Caused by Malignant Invasion of Posterior Abdominal Wall. R. S. Handley.—p. 891.
Thiouracil in Thyrotoxicosis. D. Verel.—p. 892.
Thyrotoxic Auricular Fibrillation Treated with Thiouracil. J. F. Goodwin.—p. 895.
Phenology of British Hay-Fever Plants and Its Significance to Allergists. H. A. Hyde.—p. 897.
Simple Colorimetric Method for Estimating Sugar in Urine or Milk. S. El-Dewi.—p. 899.

1:921-968 (May 28) 1949

Jenner and his Impact on Medical Science. E. Mellanby.—p. 921.
Tuberculosis in Industry: Epidemiologic Study: Preliminary Report. A. Stewart and J. P. W. Hughes.—p. 926.
Some Aspects of Partial Gastrectomy. J. Hosford—p. 929.
Perforation of Rectum. J. D. T. Jones.—p. 933.
Treatment of Perforations of Esophagus: Report of 3 Cases. L. J. Temple.—p. 935.
Simulated Amnesia for Identity Treated by Electrically Induced Epilepsy. R. E. Hemphill and J. R. Stuart.—p. 938.
Unusual Case of Chronic Myeloid Leukemia. R. A. R. Taylor.—p. 940.
*Rupture of Liver Associated with Parturition. J. R. C. Burton-Brown and J. A. Shepherd.—p. 941.

Rupture of Liver Associated with Parturition.—The case described by Burton-Brown and Shepherd concerned a woman, aged 32, who was admitted seventeen hours after having given birth to her sixth child, because a complication which developed during or after labor gave rise to acute abdominal symptoms. Rupture of the liver associated with hemoperitoneum was disclosed at operative intervention. The immediate cause of the rupture was probably the muscular compression that occurs with the expulsive efforts of labor. A predisposing factor may have been the presence of hepatic damage brought about by toxemia of pregnancy. The use of the term "spontaneous" rupture is deplored. Ruptures of the liver may be divided into two main groups: traumatic rupture and hepatic apoplexy—the first usually affecting a healthy liver and the second occurring because of hemorrhage in a diseased liver. A subgroup may be added in which minimal trauma causes rupture of a diseased organ. The case reported may be regarded as an example of this subgroup.

Edinburgh Medical Journal

56:89-128 and 25-48 (March) 1949

Genesis of Peptic Ulceration. I. Aird.—p. 89.
Primary Thoracoplasty. R. Y. Keers.—p. 99.
Clubbing of Fingers. A. W. Branwood.—p. 105.
Case of Long-Standing Tuberculous Infection with Recurring Attacks of Erythema Nodosum and Erythema Multiforme. C. Cameron.—p. 121.
*Subacute Bacterial Endocarditis and Its Treatment with Penicillin. H. Matthew and A. R. Gilchrist.—p. 25.

Penicillin in Subacute Bacterial Endocarditis.—Matthew and Gilchrist review observations on 40 patients with subacute bacterial endocarditis who were under observation from October 1944 to December 1948. Only 31 of these received adequate penicillin therapy. Of these, 21 survived and 10 died. The 21 survivors have been followed for periods varying from four years to four months. Nineteen patients completed their treatment over one year ago. Since discharge from the hospital no survivor has relapsed or become reinfected, although at least 1 has had a further attack of rheumatic fever. The minimal therapeutic requirements consist of a daily dose of 500,000 units of penicillin for four weeks, the drug being administered by intramuscular injections at three hour intervals day and night. There is evidence to suggest that larger daily doses (up to 2,000,000 units) for a longer period of time (six weeks) may eradicate the infection even more completely, with less risk of relapse and with a further reduction in the mortality rate. Early recognition of the disease will reduce the mortality rate further, but deaths from emboli and from congestive failure are bound to occur. Allowing for these, the recovery rate may yet amount to 80 per cent or more. Frank rheumatic symptoms during the course of the illness are an unfavorable prognostic sign. Although it is possible to prevent and cure bacterial endocarditis, means are yet to be found to prevent and cure its common associate, acute rheumatic carditis, which leads to death from congestive failure of the heart.

Journal of Laryngology and Otology, London

63:251-320 (May) 1949

Methods of Audiometry in Modern Deafness Clinic. P. Denes and R. F. Naunton.—p. 251.
*Clinical Survey into Effects of Turbo-Jet Engine Noise on Service Personnel: Preliminary Remarks. E. D. D. Dickson and N. P. Watson.—p. 276.
Experiences of Penicillin Treatment in Acute Otitis Media. N. Grebelius and A. Sjöberg.—p. 286.
Turning Test with Small Regulable Stimuli: V. Is Ewald's Law Valid in Men? A. A. J. Van Egmond, J. J. Groen and L. B. W. Jongkees.—p. 299.
Id.: VI. Deviations in Cupulogram. Preliminary Note on Pathology of Cupulometry. A. A. J. Van Egmond, J. J. Groen, J. Hulk and L. B. W. Jongkees.—p. 306.
Unusual Case of Ménière's Disease. J. Evans.—p. 311.

Effects of Turbo-Jet Engine Noise on Service Personnel.—Dickson and Watson say that the jet engine and the approach of transsonic flight have stimulated inquiry into the physiologic effects of vibrations. This paper presents the results of a survey on a number of Royal Air Force personnel employed in various capacities on gas turbine engine aircraft. A start was made with 97 men, who were under observation for one year. Discomfort in the ear while the revolutions per minute of the engine were being increased preparatory to flight and the minor degrees of deafness and tinnitus afterward were the most prominent symptoms. There were occasional complaints of such subjective disturbances as dizziness and unsteadiness, usually noted when the subject stood near the air intake, or at least to the fore of the aircraft. Hearing acuity, as determined by audiometry, showed that there was no deterioration during the year. The survey reveals no significant effects produced as a result of work on gas turbine engines under present service conditions during the limited time in which personnel have been so employed. Deafness or other manifestations may take a much greater interval of time to reveal themselves in turbo-jet engine personnel and yet may be apparent before such changes develop in workers on engines of the reciprocating type.

Lancet, London

1:895-942 (May 28) 1949

Radiology of Rheumatic Heart Disease. J. Parkinson.—p. 895.
Spontaneous Pneumomediastinum in Pregnancy. D. J. MacRae.—p. 902.
Acute Mediastinal and Subcutaneous Emphysema. L. Fridjohn and P. G. Azzopardi.—p. 904.
Fatal Human Case of Canicola Fever. R. S. Weetch, J. Colquhoun and J. C. Broom.—p. 906.
Canicola Fever in Germany: Report of 6 Cases. J. Mackay-Dick and R. W. E. Watts.—p. 907.
Surgery in Parkinson's Disease Division of Lateral Pyramidal Tract for Tremor: Report of 48 Operations. L. C. Oliver.—p. 910.
*Para-Aminosalicylic Acid (P.A.S.) in Pulmonary Tuberculosis. M. M. Nagley and M. H. Logg.—p. 913.
Megaloblastic Anemia in Infant. J. H. Hutchinson and P. MacArthur.—p. 916.

Para-Aminosalicylic Acid in Tuberculosis.—Nagley and Logg analyzed 37 cases of active pulmonary tuberculosis treated with para-aminosalicylic acid during 1947 and 1948. Observations in these and other cases indicate that para-aminosalicylic acid is especially valuable in the acute exudative type of disease, particularly in toxic febrile patients. Such effects as reduction in temperature, fall in erythrocyte sedimentation rate, gain in weight, and a feeling of well-being occur long before radiologic improvement can be demonstrated, and, once present, they remain during treatment. Treatment with this drug often makes patients fit for collapse therapy. The tuberculostatic action of para-aminosalicylic acid cannot be doubted. The mode of action is still uncertain. Youmans inclines to the view that the drug alters pulmonary tissue reaction from exudative to proliferative by an effect on the enzymic mechanism of the tubercle bacillus. The authors are impressed with the direct action that para-aminosalicylic acid seems to exert on the host, as shown by the patient's feeling of well-being, the antipyretic effect and the improvement in the general condition. The morphologic alteration of the bacilli, which is definitely seen under the microscope, points to a direct effect also on the bacilli, while the radiologic changes noted in the lungs support Youmans's view. The low toxicity of para-aminosalicylic acid and the fact that it does not seem to produce resistant strains give it advantages over streptomycin. However, patients with acute postoperative and other types of acute pulmonary tuberculosis should not be denied streptomycin, but the value of para-aminosalicylic acid in such cases, either in conjunction with streptomycin or after its use, should be realized. Para-aminosalicylic acid does not necessarily produce a "cure," but it often can prepare the patient for collapse therapy or pulmonary surgical treatment.

Medical Journal of Australia, Sidney

1:605-632 (May 7) 1949

Antibiotics in Australian Plants and Fungi. N. Atkinson.—p. 605.
Streptomycin, Polymyxin and Chloromycetin. J. F. Funder.—p. 610.
Recent Developments in Urology. N. J. Bonnin.—p. 612.

Practitioner, London

162:349-436 (May) 1949. **Partial Index**

Treatment of Syphilis. V. E. Lloyd.—p. 349.
Modern Views on Diagnostic Tests in Syphilis. I. N. O. Price.—p. 377.
Treatment of Gonorrhea. A. O. F. Ross.—p. 383.
Medical Hazards of Camping. C. G. Learoyd.—p. 396.
Medical Services in the Small Factory. C. Swanston and R. Passmore.—p. 405.
Current Therapeutics: XVII.—Streptomycin. N. B. Capon and R. McL. Todd.—p. 414.

Proceedings of Royal Society of Medicine, London

42:283-374 (May) 1949. **Partial Index**

Submucous Rectification of Nasal Septum. H. V. Forster.—p. 283.
Osteomyelitis of Frontal Bone of Rhinogenic Origin. R. G. Macbeth.—p. 284.
Anesthesia for Surgical Treatment of Hypertension. J. Gillies.—p. 295.
Detection of Fetal Abnormalities. J. B. Hartley.—p. 301.
The Heart in Endocrine Disease. W. Evans.—p. 331.
Some Cultural Group Abreactive Technics and Their Relation to Modern Treatments. W. Sargant.—p. 367.

Acta Medica Scandinavica, Stockholm

133:221-298 (May 7) 1949. Partial Index

Pregnancy in Essential Thrombocytopenia. G. F. Saltzman.—p. 221.
*Follow-Up of 687 Medically Treated Cases of Peptic Ulcer. H. Malmros and T. Hiertonn.—p. 229.
Influenza in Sweden in Light of Investigations in Recent Years. G. Löfström.—p. 253.
*Case of Aleukia Haemorrhagica (Frank) and Panmyelophthisis After Urethane Treatment in Leukemia. O. Eskola.—p. 261.

Medically Treated Peptic Ulcer.—Malmros and Hiertonn review the results of follow-up studies on 703 cases of peptic ulcer. Twelve of these subsequently proved to be of cancer and 4 could not be traced. Detailed information was obtained in the remaining 687 cases (192 gastric and 495 duodenal ulcers) after seven to ten years. The diagnosis of ulcer had been verified roentgenologically in all of the cases. The patients were kept in bed in the hospital three to four weeks. During the first week they were given a liquid or semiliquid diet, during the second week a puréed diet; during the third week a puréed diet plus other easily digested food. Even patients with hemorrhage were given a high caloric diet. The first results of this treatment were favorable in that 93.5 per cent of the patients no longer showed a crater on roentgenologic examination. The follow-up revealed a poor prognosis, in as much as the course was favorable in only 31 per cent of the patients and only about half of these were entirely free from distress. The course was definitely serious in 40 per cent of the cases; 3.9 per cent of the patients died of peptic ulcer; 5.2 per cent had perforations. The course was somewhat more favorable in patients with gastric than with duodenal ulcer. There is no real risk of malignant degeneration of peptic ulcer. It is extremely difficult to formulate generally applicable principles for the advisability of surgical treatment, but it is suggested that, if it proves difficult to change the mode of life of a patient, early operation might be advisable.

Aleukia Haemorrhagica and Panmyelophthisis After Urethane Treatment.—Eskola used urethane (ethyl carbamate) in 6 patients with chronic myeloid leukemia. The drug was given by mouth in daily doses of 8 Gm. for a period of twelve to fourteen days. During this period the white blood cell count had gone down to about 20,000 without a noteworthy effect on the red cells or thrombocytes. The decrease of the leukocytes continued without treatment during the subsequent week or two, to a value of about 10,000, and stopped at this level in 4 cases. One patient had aleukia hemorrhagica two weeks after the termination of the treatment, and another patient had panmyelophthisis. The first patient had received arsenic and roentgen therapy eight months previously, but it is unlikely that these were responsible for the development of the hemorrhagica aleukia. This patient responded to treatment with blood transfusion, penicillin, vitamins and bone marrow. Later a renewed increase in leukocytes again responded to treatment with urethane. The patient with panmyelophthisis died six weeks later, despite treatment with penicillin, liver extract and iron. The author believes that urethane must be regarded as responsible for the blood dyscrasias in these patients.

An. del Inst. de Mater. y Assist. Social, Buenos Aires

9:1-176, 1947. Partial Index

*Experience with Sulfonamide-Penicillin-Therapy in Cesarean Section of Infected Cases. M. L. Perez and R. Echevarria.—p. 11.
Ethinyl Estradiol as Inhibitor of Milk Secretion. R. M. Gori and E. Bayona.—p. 107.
*Spinal Anesthesia and General Anesthesia in Cesarean Section. J. R. Firpo.—p. 141.

Sulfonamide and Penicillin Therapy in Cesarean Section in Infected Patients.—Perez and Echevarria review the literature and report their large experience with cesarean section in pregnant women with infection. They believe that the combination of intraperitoneal sulfonamide therapy during the surgical intervention with postoperatively given penicillin solves the problem.

Spinal Anesthesia and General Anesthesia in Cesarean Section.—Three hundred and fifty cases of cesarean section were analyzed; 150 operations were performed with general anesthesia and 200 were performed with spinal anesthesia. With spinal anesthesia the maternal accidents were more frequent, but hemorrhages were less severe and the effect on the child was less harmful. Firpo postulates that spinal anesthesia is indicated whenever complications for the child are anticipated.

Archiv für Kinderheilkunde, Stuttgart

136:129-192 (No. 3) 1949. Partial Index

Role of Allergy in Gastric Disturbances During Childhood. M. Frobenius.—p. 129.
*Action of Streptomycin in Infants with Dyspepsia and Toxicosis. A. Loeschke and A. Cochlovius.—p. 154.

Streptomycin in Dyspepsia and Toxicosis.—According to Loeschke and Cochlovius streptomycin is an antibiotic with the chemical characteristics of a base. It differs in this respect from penicillin, which is an acid. Streptomycin is neither destroyed nor absorbed by the gastrointestinal tract. This characteristic is generally regarded as a disadvantage, because in order to achieve a systemic effect it is necessary to administer streptomycin parenterally. However, this characteristic and the stability of the drug make it particularly suitable for local action in the intestine. The authors gave streptomycin by mouth to children with dyspepsia. The streptomycin was given in individual doses of 25 to 75 mg. in a teaspoon of tea five to eight times daily, usually thirty minutes before a feeding. In children who refused feedings, food as well as streptomycin was given by tube. Control examinations of stools were made every day. A number of illustrative case histories are included. Streptomycin had a definite effect and caused a turn for the better even in the gravest cases. This characteristic is probably due to the specific effect that streptomycin exerts on the coliform-flora of the intestine. It causes a reduction in this flora, and sometimes the coliform organisms disappear completely from the stools. Whether the organisms in these cases were the normal ones or those typical of dyspepsia was not ascertained. These observations prove that oral administration of streptomycin will cure dyspepsia and toxicosis in infants. Improvement becomes evident at the latest after twenty-four hours. The appetite improves, and the stools decrease in number and become more formed. The body weight shows a consistent increase, and signs of intoxication (sudden screaming, coma, fever and excessive respiratory movements) subside.

Archiv f. Psychiatrie & Nervenkrankh., Berlin

181:489-756 (March 25) 1949. Partial Index

Structure of Neural Portion of Human Hypophysis. W. Holzer and B. Hölscher.—p. 517.
*Gestation and Multiple Sclerosis. J. Hirschmann.—p. 530.
Epidemic Encephalitis and the Concepts of Syneresis: Anatomy and Pathogenesis of Postencephalitic Parkinsonism. A. von Braunmühl.—p. 543.
*Prefrontal Leukotomy. E. Moniz.—p. 591.
Encephalitis in Trichinosis with Demonstration of Trichinella in Brain. M. Schöpe.—p. 603.
Histologic and Topical Changes and Vulnerability in Human Brain in Presence of Oxygen Deficiency, Edema and Plasmatic Infiltrations. W. Scholz.—p. 621.

Gestation and Multiple Sclerosis.—Hirschmann discusses the conditions under which multiple sclerosis, when it concurs with pregnancy, may take an unfavorable course. His observations were made in 90 women with multiple sclerosis, who were observed at the Clinic for Nervous Diseases in Tübingen, and who had been pregnant once or several times. The condition in cases in which pregnancy and delivery concurred with a chronic progressive phase of multiple sclerosis usually became aggravated and took an unfavorable course. The age of the patient also seemed of considerable importance in the prognosis. Women who had advanced beyond the third decade of life were in greater danger than were younger women. Since aggravation of multiple sclerosis frequently became manifest at a period when interruption of the pregnancy is no longer possible and since, moreover, induced abortions themselves may cause considerable exacerbation of the sclerotic process, prevention of pregnancy rather than its interruption is advisable in patients in whom multiple sclerosis takes a certain course.

Prefrontal Leukotomy.—Moniz mentions the theoretical foundations for his first attempts at a surgical treatment of certain psychoses, briefly describes the technic and reviews the development and the present status of prefrontal leukotomy. He gives particular attention to the valuable advances in psychosurgery contributed by investigators in the United States.

Archivos de Medicina Infantil, Havana

18:1-65 (Jan., Feb., March) 1949. **Partial Index**

*Treatment of Pellagra with Gastric Mucous Membrane. A. Marti Prieto, E. Padron Ruiz and F. Perez Montes.—p. 1.
Congenital Megaloureter. E. Blanco Rabassa, O. Fleites and J. Jordan.—p. 45.

Gastric Mucous Membrane in Treatment of Pellagra.—The authors followed the progress of 5 patients with pellagra treated with dry gastric mucous membrane, performing weekly biopsies of the liver. There was no other lipotropic medication. The initial fatty infiltration of the liver subsided and there was an improvement in the clinical symptoms. The authors stress effectiveness of the lipotropic activity of dry gastric mucous membrane. Biopsies of the liver were performed in more than 200 cases. They constitute an indispensable feature in the diagnosis and prognosis of diseases of the liver, and they are absolutely innocuous.

Medicina, Madrid

17:159-244 (March) 1949. **Partial Index**

*The First 50 Cases of Tuberculous Meningitis Treated with Streptomycin in the "Hospital del Rey." A. M. Vallejo de Simón.—p. 161.
Extraperiostial Superior Thoracoplasty with Neumolysis. G. Manresa Formosa.—p. 181.

Streptomycin in Tuberculous Meningitis.—Vallejo de Simón reports a follow-up of 50 patients with severe tuberculous meningitis and arrives at the conclusion that intensive treatment with streptomycin will effect a cure in 15 to 20 per cent of cases.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

93:1213-1288 (April 16) 1949. **Partial Index**

Early Recognition of Carcinoma of Prostate. J. A. Weijtlandt.—p. 1214.
Perforations of Esophagus Caused by Foreign Bodies. E. Huizinga.—p. 1224.
The Scalenus Syndrome. T. Boesman and J. P. Braat.—p. 1229.
Dosage in Gold Therapy in Chronic Articular Rheumatism. R. K. W. Kuipers.—p. 1240.
*Two Attacks of Measles Within Five Weeks. A. T. L. M. Mertens.—p. 1246.

Two Attacks of Measles Within Five Weeks.—Mertens states that although most general practitioners know that second attacks of measles are possible, it is rare that the same child contracts measles twice within the same epidemic. He presents the histories of 2 children who had second attacks after intervals of thirty-two and twenty-four days, respectively. In both instances the second attack was much severer than the first.

93:1289-1396 (April 23) 1949. **Partial Index**

*Clinical Significance of Density of Bacilli in Tuberculous Sputum. W. Bronkhorst and J. K. Kraan.—p. 1299.
Occurrence of Positive Cultures in Microscopically Negative Sputums. I. N. Oosterbaan.—p. 1308.
Experiences with Tetra-Ethyl Ammonium in Treatment of Hypertension. J. A. Rodbard.—p. 1330.
Complications Following Vaccination Against Smallpox. A. W. Vegter.—p. 1345.

Density of Bacilli in Tuberculous Sputum.—Bronkhorst and Kraan stress that in examining sputum for tubercle bacilli more attention should be given to the number of bacilli, since a correlation exists between the density of the bacilli in the smear and the morphologic character of the tuberculous lesion in the lung. The smear must be thin and uniform. Differences in thickness and too great thickness produce unreliable results. Staining is done in the usual manner with the method of Ziehl-Neelsen. Examination should be performed with a binocular microscope. The bacilli should be counted in 10 visual fields on the average. The authors differentiate five degrees of density. They designate the density as one plus, or very weak, when up to 40 bacilli are found in the systematic search of the smear for ten to fifteen minutes; as two plus, or weak, when on an average up to 20 bacilli are found in ten visual fields; as three plus, or moderate, when up to 60 bacilli are detected in ten fields; as four plus, or strong, when an average of 120 bacilli are found in ten fields; and as five plus, or very strong, when over 120 bacilli are found in ten fields. The true size of a visual field is about 0.18 mm., the enlargement about 700 times. The authors record the results obtained with the aforementioned classification in 500 cases studied over a period of ten years. They found that the density of bacilli increases as the size of the pulmonary cavity and the activity of the process increases.

Nordisk Medicin, Stockholm

41:623-666 (April 8) 1949. **Partial Index**

*Antihistaminics as Antidote Against Histamine-Like Effect of Curare Preparations. H. Poulsen.—p. 627.
Operative Treatment of Total and Partial Retention of Placenta. J. A. Abolins.—p. 632.
Clinical Studies on Treatment of Hydrocephalus in Children. M. Sulamaa.—p. 640.
What is Child Psychiatry? N. Waal.—p. 643.
Thyrotoxicosis in Girl Aged 4. H. Veflingstad.—p. 648.
Para-Amino Salicylic Acid (PAS) Orally in Tuberculous Otitis. G. Smars and S. G. Kempe.—p. 649.
Hydrocele Muliebris Simulating Strangulated Hernia. H. E. Blomquist.—p. 651.

Antihistamines as Antidote Against Histamine-Like Effect of Curare Preparations.—Poulsen states that the applications of curare preparations in psychiatric shock treatment and in surgical anesthesia gives rise to undesirable by-effects, partly due to the histamine-like action of the curare. His observations in 100 patients given shock therapy preceded by curare given intravenously and in some cases also preceded by administration of an antihistamine agent, with a total of 486 shocks, and in 230 patients given anesthesia with the addition of curare (in 155 cases preceded by antihistamine given intravenously) seem to show that antihistamine substances can reduce the number of by-effects and in many cases prevent them. With curare given in electroshock therapy, antihistamine especially counteracts (*a*) hypersecretion in the respiratory tract and oral cavity and (*b*) bronchospasms and bronchiolospasms. With the use of curare in surgical anesthesia, antihistamine especially counteracts (*a*) oozing capillary bleeding in the operative field and (*b*) bronchospasms and bronchiolospasms.

Prensa Médica Argentina, Buenos Aires

36:759-794 (April 29) 1949. **Partial Index**

*Curves of Salicylemia in Man. A. Ruiz Moreno, M. Litter and D. K. de Litter.—p. 759.
Psychosomatic Aspects of Eczema. E. Pichon Rivière.—p. 780.

Curves of Salicylemia in Man.—Ruiz Moreno and collaborators made determinations of the salicylic acid in the blood of 53 persons, either normal or with chronic rheumatism, after oral administration of sodium salicylate. All the subjects in one group had a dose of 4 Gm. of the drug followed by 2 Gm. every four hours for either two or six consecutive doses. Those in the other group had a dose of 4 Gm. of the drug, followed in ten minutes by the administration of an equal dose of para-aminobenzoic acid. The authors found that the "useful" concentration of 35 mg. of salicylic acid per hundred cubic centimeters of blood, which is necessary for therapeutic effects of the drug in rheumatic fever, is reached within twenty-four hours after administration of the first dose of the drug. This concentration is maintained for twenty-four hours or more after administration of the smaller doses by either of the aforementioned methods. The concentration of the drug in the blood in some cases approaches toxic levels. It rapidly falls as soon as the administration of the drug is stopped. There was individual variability with respect to the doses used. Oral administration of para-aminobenzoic acid ten minutes after ingestion of the drug causes an increase in the salicylemic curve. The mechanism of the action is explained by the effects of the acid in increasing intestinal absorption of the drug and diminishing the rate of renal elimination of the drug. Administration of salicylic acid by mouth causes "useful" therapeutic concentration of salicylic acid in the blood. The intravenous route of administration of the drug is unnecessary. The authors point out the importance of this procedure as a guide for the treatment of rheumatic fever.

Presse Médicale, Paris

57:441-456 (May 21) 1949

Some Experimental Data on Apparent Death and Resuscitation. H. Hermann, F. Jourdan and J. F. Cier.—p. 441.
Pathology of Middle Lobe of Right Lung. R. Even, J. Lecoeur and G. Kerbrat.—p. 442.
*Clinical Syndrome of Persons Suffering from Radiation Effects Due to Explosion of Atomic Bomb. P. E. Genaud.—p. 443.

Radiation Effects Due to Explosion of Atomic Bomb.—*According to Genaud, it is only now that the study of the* victims of the atomic bomb explosions in Nagasaki and Hiroshima and the results of the Bikini experiments make possible an exact description of the syndrome produced by the radiation effects of the atomic bomb. Particularly sensitive to the radiation effects were the hematopoietic system, the digestive tract, the epidermis and the sexual glands. Three clinical types of the syndrome may be distinguished: (1) The hyperacute type, presented by victims who were in an area of 1 kilometer around the epicenter of the explosion and characterized by nausea, vomiting, diarrhea, rise of temperature, severe leukopenia and hemorrhages resulting in death within four to eight days. (2) The acute type, presented by those who were within 1 to 1.25 kilometers of the epicenter. In 50 per cent of these death occurred within three to five weeks after delusive temporary improvement. (3) The subacute type, presented by those who were within 1.25 to 2 kilometers of the epicenter. In this group death did not occur usually; there was a long period of remission, and the period of recrudescence was less pronounced. As to the remote consequences of the radiation effects, the most severe sequelae were related to radiomutation. The permanent commission for investigation of the radiation effects of the atomic bomb carried out research on organisms with rapid reproduction such as plants, animals and drosophilae and on the children of survivors of the atomic bomb explosions. It is still too early to draw definite conclusions.

57:479-494 (May 28) 1949

Alimentary Intoxication with Salmonella Pullorum. C. Gernez-Rieux, R. Buttiaux, A. Kesteloot and R. Suffran.—p. 479.
*Place of Needle Biopsy of Liver in Hepatology and General Medicine. P. Cazal.—p. 480.
Determination of Types of Typhoid and Paratyphoid B Bacilli by Means of Bacteriophages. P. Nicolle and A. Jude.—p. 481.

Needle Biopsy of Liver.—Cazal emphasizes on the basis of 400 needle biopsies of the liver the importance of the method whether applied by abdominal or by intercostal approach. The value of needle biopsy depends on obtaining the tissue correctly with adequate equipment, particularly with a needle of fairly large bore. The author's studies permitted diagnoses, which would have been impossible with other methods, as well as control of the clinical and humoral data, evaluation of the extent and the intensity of the lesion, condition of the parenchyma of the liver and the progress of the disease. An additional advantage of the method is the abundant and fresh material obtained for microscopic examination. With correct indications and technic, aspiration with a needle of biopsy material from the liver is inoffensive and not painful. Repeated aspirations are well tolerated.

57:507-518 (June 4) 1949

*Treatment of Bacterial Infections with Penicillin in Aqueous Solution Administered at Long Intervals. G. Bickel and H. C. Plattner.—p. 507.
Strychnine and Sleep-Counteracting Amines in Treatment of Coma Induced by Barbiturates. Cossa, Bailbe, Lombard, Maitre and Michelon. —p. 508.

Penicillin in Bacterial Infections.—Bickel and Plattner treated several patients with pneumonia, some of them with severe bronchopneumonia, with three to four doses of 300,000 units of crystalline penicillin in aqueous solution at twelve hour intervals. As a rule, treatment was continued with injections at twenty-four hour intervals, and was discontinued altogether forty-eight hours after the temperature had been restored to normal. This was usually effected with eight to ten injections, i. e., with a total dose of 2,400,000 to 3,000,000 units. In a number of cases the patients were given only one dose of 500,000 units on each of the first two days of treatment and one dose of 300,000 units on the following days. The results obtained by this method were as satisfactory as those obtained with daily multiple injections. The rate of recovery was the same, with the same rapid detoxication and the same defervescence obtained within three days. The incidence of pleuritic complications was low. In a few cases of endocarditis lenta, satisfactory results were obtained with two daily injections of 500,000 units of penicillin; the response of the patients to this method of treatment equaled that of eight injections of 120,000 units of the drug. In 1 case the sterilization of the blood was obtained within eight days with one injection of 1,000,000 units daily while six daily injections of 200,000 units for three weeks had failed. The results reported confirm those obtained by American workers, particularly Tucker and Eagle. The action of penicillin in vivo seems to be of longer duration than is shown by the determination of its degree of concentration in the blood. It might be advantageous to attack the sensitive bacteria in different stages of their development with massive doses administered only every twelve hours at the start of treatment and then every twenty-four hours.

Revista Chilena de Pediatría, Santiago

20:101-140 (March) 1949. Partial Index

Icthyosis Fetalis Gravis. W. Bustamante, M. Tejeda and G. Socias. —p. 111.
*Congenital Syphilis of Bone and Penicillin. J. Rosselot and J. Hasbun. —p. 118.

Penicillin and Congenital Syphilis of Bone.—Rosselot and Hasbun state that penicillin produces a clear regression of bone lesions in congenital syphilis. The therapeutic effect is most manifest during the first 3 months of life.

Revue D'Immunologie, Paris

13:97-196 (No. 3) 1949. Partial Index

Serum of Hyperimmunized Men in Treatment of Whooping Cough. R. Debré, A. Tzanck, Françoise Herzog and R. Martin Du Pan.—p. 97.
*Contribution to Study of Polymyxin (Aerosporin), a New Antibiotic. C. Levaditi, A. Vaisman and J. Henry-Eveno.—p. 112.
Propagation of Tetanus Toxin by Nervous Route, Demonstrated by Resection of Nerves in Animals in State of Immunity. D. D'Antona. —p. 128.

Polymyxin.—Levaditi and co-workers studied the in vitro antibacterial activity of polymyxin A sulfate using Escherichia coli, Eberthella typhosa, Salmonella paratyphi A, Shigella paradysenteriae, Pseudomonas aeruginosa and Proteus vulgaris as test organisms. The bactericidal effect of polymyxin (30,000 and 50,000 units) was demonstrated by argyrophilia and by morphologic changes; abundant formation of stromas and occurrence of piriform bodies was observed occasionally. The bactericidal effect preceded these involutional microbic lesions. Brownlee and Bushby's observations on the radical bactericidal effect of the new antibiotic were confirmed. The involutional changes produced by penicillin in certain bacteria were earlier and of greater intensity than those produced by polymyxin. In this respect polymyxin resembles streptomycin rather than penicillin. Experiments on mice showed that seven of eight infections produced by gram-negative bacteria could be cured with polymyxin administered by the subcutaneous route in doses varying from 2,000 to 35,000 units. P. vulgaris proved not sensitive to the antibiotic in mice, although in vitro this organism had shown aptitude for involutional changes.

Schweizerische medizinische Wochenschrift, Basel

79:445-464 (May 21) 1949. Partial Index

*Survey of Occupational Vesical and Renal Lesions in the Dye-Stuff Industry. A. Müller.—p. 445.
Nature, Pathogenesis and Treatment of Focal Infection. G. Meák. —p. 450.
*Pharmacologic Foundations and First Results of Treating Tuberculous Processes of the Eyes with Para-Aminosalicylic Acid. R. Witmer and L. Ragaz.—p. 452.

Vesical and Renal Lesions in the Dye Industry.—Müller collected 59 cases of vesical tumors in the dye industry in Basel in 1933. From 1933 until the time of writing 78 additional cases came under his observation, making a total of 137 cases. It is conceded that the intermediate agents in the production of dye are responsible for tumor formation, particularly aniline, benzidine, naphthylamines and their homologues. It is apparently necessary for carcinogenesis that the amino group be intact. Substituted naphthylamines are prevalent in the rubber industry, but vesical tumors have not been reported in that industry. In the patients observed by the author benzidine was held responsible 31 times, beta-naphthylamine 38 times, aniline 27 times, toluidine 11 times, and alpha naphthylamine 2 times; in other cases data were unreliable. Not only amines but also hydrocarbons may produce vesical tumors. During the war coal shortage, anthracene residues were used as boiler fuel. Vesical cancer developed five years later in a man who had been exposed for three years to the vapors of anthracene while tending a furnace. Cancers of the bladder have been observed also in workers who came in contact with tar and in those who produce gas or briquets (compressed coal dust). Estimates on the incidence of these tumors and the risk for the workers differ considerably, from less than 1 to over 30 per cent. In workers who have contact with beta-naphthylamine the incidence has been as high as 33 per cent for those who have been exposed more than five years. The latent period differs. In the author's material it varied between 1 to 45 years; the average was 17 years. These occupational cancers develop at an earlier age than do cancers of unknown causation. This can be explained by the fact that workers frequently enter this industry while in their twenties and tumors make their appearance from ten to twenty years later. Symptoms appear quite late; as a rule they are absent until the neck of the bladder and the region of the sphincter become involved, or until infection, ulceration and incrustation develops. The ratio of benign to malignant tumors has been estimated as 1:3, but even the benign tumors involve the risk of malignant degeneration. The author employs chiefly electrocoagulation for papillomas and small carcinomas. Regular control examinations and prompt treatment of new growths may prevent the development of large and perhaps also of malignant growths for years and decades. Resection of the bladder is recommended for carcinoma. At a Basel dye factory, the urine of the workers is examined every three months for albumin and occult blood. If the reactions are repeatedly positive, a cystoscopic examination is performed.

Para-Aminosalicylic Acid in Tuberculosis of the Eye.—Witmer and Ragaz report experimental studies with para-aminosalicylic acid on the eyes of rabbits. The aqueous humor of the rabbit eye contains effective concentrations of the drug for six hours, if it is administered in a dose of 0.28 Gm. per kilogram of body weight. The compound readily penetrates into the aqueous humor following the subconjunctival injection of an isotonic 2.8 per cent solution of para-aminosalicylic acid, but the concentration rapidly subsides after this mode of administration. Observations on 3 patients with tuberculous uveitis reveal the favorable effect in such cases. Six additional patients are still under treatment, which cannot as yet be evaluated. Three severe cases appear to be somewhat refractory. On the basis of experimental and clinical experiences, the authors recommend a daily dose of 3 times 10 or 3 times 12 dragées of the drug by mouth for five days, followed by an interval of three days without treatment. Effect of the oral medication is supported by the subconjunctival injection of a 2.8 per cent solution of the drug every second day. These injections can be given every day during the three day interval when oral treatment is not given. The tuberculous character of the uveitis must be definite, and other etiologic factors must be excluded before treatment with para-aminosalicylic acid is instituted. The nature of the disease should be verified by local observations, by tuberculin tests and by general physical examinations.

Ugeskrift for Laeger, Copenhagen

111:417-442 (April 14) 1949. Partial Index

*Hormonal Treatment of Cancer of Breast with Special Regard to Treatment with Androgenic Hormones. S. Kaae.—p. 417.
Treatment of Supracondylar Fracture of Humerus by Aid of Persson's Frame. A. Jessing.—p. 419.
*Bandl's Ring Treated with Amyl Nitrite. D. Prytz.—p. 426.

Endocrine Therapy of Cancer of the Breast with Special Regard to Treatment with Androgenic Substances.—Kaae says that in addition to palliative radiotherapy in inoperable cases of cancer of the breast and in recurrence and mestatases after operative intervention roentgenologic castration, massive doses of androgens and more limited doses of estrogens can be advantageously applied. The effect in all cases is temporary. Treatment with massive doses of estrogens is indicated only in cancer localized to the soft parts in women aged 60 or over and should not be applied in premenopausal women. Roentgenologic castration often gives excellent effect before the menopause and in the first years following. Treatment with androgens can be given at all ages, in younger women after the effect of roentgenologic castration has ceased. The best effect occurs in osseous metastases. Since pronounced aggravation may appear during the treatment, especially when the serum calcium level is high or rising, regular control of the serum calcium during treatment is necessary. The androgenic substance used has been testosterone propionate, which in oil emulsion should be given in doses of at least 60 mg. two or three times weekly, in somewhat larger doses at the start, the first series of treatments to be continued for at least three months. With presumably equally good effect, testosterone propionate in crystalline suspension can be given with less frequent injections of correspondingly larger doses; for example, 100 mg. once a week. Testosterone propionate tablets can be implanted subcutaneously, but the treatment should probably be repeated at intervals of a few months at the most and with implantation of massive doses, 1,000 mg. or more.

Bandl's Ring Treated with Amyl Nitrite.—Prytz ascribes the improved prognosis in constriction ring dystocia to the combined use of antispasmodic drugs and active intervention. Treatment with amyl nitrite, according to Gilliat, as the introduction to delivery in women with Bandl's ring is simple, cheap and as a rule effective and without danger. The contraindications are few (glaucoma, grave circulatory disturbances and collapse). Of the 5 cases reported, the history of 1 woman with twins, with typical constriction ring after birth of the first twin, is described in detail. Treatment with amyl nitrite inhalation was followed by unexpectedly easy forceps delivery of a high head. There were no complications for mother or child.

111:443-464 (April 21) 1949. Partial Index

Treatment of Paralysis Agitans with Parpanit. T. Dalsgaard-Nielsen.—p. 446.
*Little's Disease Treated with Parpanit. T. Jersild.—p. 449.
Disappearance of Dental Substance Due to Action of Acid in Oral Cavity. J. Hansen.—p. 451.
Undulant Fever and Unpasteurized Milk. F. Raaschou.—p. 452.

Little's Disease Treated with Parpanit®.—Jersild says that, while parpanit® (diethylaminoethyl-1-phenylcyclopentane-1-carboxylate hydrochloride) does not supersede other forms of treatment of this disease, it may be a valuable supplement. Four patients treated with the drug are reported. The agent was without effect in the patient with only spastic symptoms in the lower extremities. Results were good in the 3 patients with extrapyramidal disturbances in addition to spasticity.

Wiener klinische Wochenschrift, Vienna

61:289-304 (May 13) 1949. Partial Index

Heredity and Environment in Tuberculosis. L. Popper.—p. 289.
Encephalitis in Endocarditis Lenta. F. Sommer.—p. 292.
*Experiences with Temporary and Permanent Exclusion of Vagus Nerve (Vagotomy and Vagotripsy) in Peptic Ulcer. E. Ebner.—p. 296.
Perforation of Meckel's Diverticulum During Pregnancy. M. Wenzl.—p. 298.

Temporary or Permanent Exclusion of Vagus Nerve in Peptic Ulcer.—Ebner employed exclusion of the vagus nerve only in cases of milder disease. Resection was always done in the presence of large callous ulcers or stenosing duodenal ulcers and whenever carcinoma was suspected. Vagotomy was done in 8 cases of gastric ulcer, 10 cases of duodenal ulcer, 1 jejunal ulcer and once in adhesive perigastritis, a total of 20 cases. Vagotripsy (crushing of the vagus nerve) was done in 1 case each of gastric and duodenal ulcer and in 10 patients with adhesive perigastritis. The favorable effects and the postoperative course was about the same with vagotripsy as with vagotomy, except that the undesirable late effects were somewhat less frequent with vagotripsy. The author concludes that generally resection is to be preferred but in some cases vagotomy is better. Vagotripsy is indicated in disturbances caused by adhesions (adhesive perigastritis), in the presence of pains from inoperable carcinomas and in the presence of small gastric or duodenal ulcers.

Book Notices

Campbell's Operative Orthopedics. Editor: J. S. Speed, M.D.; Associate Editor: Hugh Smith, M.D. Volumes I and II. Second edition. Cloth. Price $30. Pp. 836; 837-1643, with 1141 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

The new two volume edition of 1,643 pages of text and over 1,100 illustrations forms a most fitting amplification of the late Dr. W. C. Campbell's original work. The editors have truly met a timely need in carefully compiling and correlating the up-to-the-minute recognized orthopedic instruments, methods, technics and equipment, used in the surgical treatment not only of the conditions seen in everyday practice but also of unusual pathologic conditions.

This is a scientific work that every orthopedic surgeon will want in his library. It is a valuable reference for every fellow or resident studying orthopedic surgery, a useful guide for nearly every accepted method of treating surgically any orthopedic condition. The surgeon who has even a casual interest in orthopedic problems, or is occasionally confronted with such conditions, with the aid of the text can evaluate the various technics for a specific case. The material is sufficiently detailed to give a clear picture of all potentialities. The splendid illustrative material adds much to the clarity and interest of the pathologic conditions and treatment discussed.

There are some minor features that might be improved. The editors in their effort to give due recognition of every estimable procedure that might be appropriately used under certain circumstances in a particular deformity, often leave the inexperienced surgeon with a choice of so many technics that he may become confused. Most of these methods have a distinct place, and it would seem that an allowance for space would be warranted for an explanation and basis for judging the technic best adapted for the various types of deformity. The young inexperienced surgeon, or the courageous general surgeon who occasionally does an orthopedic operation, might be led astray in his judgment by the attractiveness of a particular picture of technic as compared with another.

It is essential that the reader not only study the many technics but that he read the introductory paragraphs of each chapter, as these are a key to valuable information and general explanation with respect to anatomy, physiology, pathology and prognostic possibilities of the technics that follow. The opinion of the editors is invaluable in the selection of a suitable operative procedure.

The reviewer feels that one who has a new edition of Campbell's Operative Orthopedics will have an up-to-date exhaustive work on this subject for several years to come.

Adoption in New York City. Report of an Inquiry into Adoptions and Related Services by the New York City Committee on Adoptions. Sponsored by the New York Academy of Medicine, the United Hospital Fund of New York, the Welfare Council of New York City. Paper. Price, $1.25. Pp. 99. The Welfare Council of New York City, 44 E. 23rd St., New York 10, 1948.

This is the report of the New York City Committee on Adoptions to its sponsors, The New York Academy of Medicine, The United Hospital Fund of New York and the Welfare Council of New York City.

The work of the committee is authorized, explained, commended and limited, respectively, by a sponsor's note, a forward, an introduction and a preface. The report proper, some 37 pages, is divided into four sections. The first contains quotations from some laws and discusses other laws and regulations governing adoptions in New York City. The second section describes the types of services made available by adoption agencies in New York City and discusses the adequacy of these services in view of present and anticipated demands. The third recognizes the right of the public to know what adoption agencies are for and advocates a program of public relations. The fourth section presents the committee's recommendations for modifying and improving adoption procedures and services. Three appendixes, besides including a further quotation from the statutes, describe methods used by the committee in making this study.

Care of the Surgical Patient, Including Pathologic Physiology and Principles of Diagnosis and Treatment. By Jacob Fine, M.D., Surgeon-in-Chief, Beth Israel Hospital, Harvard Medical School, Boston, Mass. Cloth. Price, $8. Pp. 544, with 40 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1949.

This guide to the care of the surgical patient has been prepared with the assistance of several collaborators. While it ideally represents the standard practice in the surgical service of one teaching hospital, it covers a variety of situations which are daily problems in any active surgical hospital. As such it leans heavily on experience and gives few references to the literature.

The book begins with an outline for examining the patient admitted to the service. The unconscious patient is a frequent problem and the description of what to look for is a gem of brevity. This is followed by a description of technic for regional examinations. General considerations of the status of the patient, depending on the particular pathologic processes encountered, come next. Nutrition, fluid balance, shock, hemorrhages and infections are some of the subjects discussed. Ideas on liver toxins in shock are mentioned. The management of common postoperative situations, such as a "postgastrectomy state," are described. It is suggested that such distressing problems as "dumping" or prolonged retention following gastric resection deserve more than mention. These are problems that often make life on the surgical service difficult for all the assistants and the surgeon. The significance of biliary drainage from a wound following apparently simple cholecystectomy is more thoroughly presented. Illustration of some of these problems by brief case histories stressing the management involved would be valuable. However, the personal experience reflected in almost every line adds a distinctly fresh approach. This volume is a valuable addition to the surgeon's library.

Doctor of Medicine. By Irma Gross Drooz, M.D. Cloth. Price, $3. Pp. 308. Dodd, Mead & Company, Inc., 432 4th Ave., New York 16, 1949.

Dr. Drooz conducts the reader through the agonies and the joys of a complete medical education. She does this in a thoroughly readable and authentic autobiography of a career that, to date, has not yet really begun.

The volume gives a truthful account of the problems which beset the average premedical student, which in her case were greatly increased because of her sex. An account is given of her financial struggles, her application for admission to medical school, her acceptance, the introduction to her medical studies and their unfolding through her four years of study. She portrays her faculty clearly but fortunately kindly, since many of them can no doubt be identified from her account. The courses she studied, with the textbooks and instruments needed, are discussed in detail, and the various costs are mentioned. The author also takes the reader through the lean years of hospital training which many a doctor must spend after medical school. The various licensing examinations, the internship and residencies are pictured, and she even touches on the problems of starting in general practice through the experiences of her classmates. Throughout the account she seems to lead a normal life, as medical students go, having little time for recreation and having only one real male friend, a classmate who surprised her by suddenly marrying one of her best friends, but all ends happily as she meets and marries the man of her dreams in her neurosurgical residency.

The book is entertaining reading in addition to being an accurate and complete account of the process of becoming a lady doctor. Most of it applies equally well to either sex. It should be made required reading for medical school faculties, since it gives a neat picture of their effectiveness from the point of view of a capable student. It is an excellent book for the student about to embark on the study of medicine and for his parents, since they will gain a clearer perspective of the years of struggle which lie ahead. It would be a good book for the doctor to have where his patients could read it, if they had that much time, as it is both entertaining and accurate and would give them an understanding of the time, trouble, work and expense which have gone into every physician's education.

Fundamentals of Internal Medicine. By Wallace Mason Yater, A.B., M.D., M.S., Director, Yater Clinic, Washington, D. C. Third edition. Cloth. Price, $12. Pp. 1451, with 315 illustrations. Appleton-Century-Crofts Company, Inc., 35 W. 32d St., New York 1, 1949.

The first edition of this book appeared in 1938. It originally was designed to present the essentials of internal medicine in the simplest possible form for students and practitioners. This objective has been achieved.

There are eighteen contributors in addition to Dr. Yater. Nevertheless, the simple style and concise presentation has been maintained throughout. The four closing chapters are somewhat unusual and deal, respectively, with "Symptomatic and Supportive Treatment," "Inhalational Therapy," "Clinical Values and Useful Tables" and "The Physician Himself," the latter including brief discussions of internships, licensure, specialist certification, medical ethics and similar nonscientific material, all of which is interesting and useful.

Dr. Yater remarks in the preface to this edition that he was struck with the tremendous number of changes and additions necessary. Indeed, this problem must have been faced by everyone revising a textbook during the past few years.

The attempt at simplification may have gone too far in some cases. Most of the rarer diseases are discussed so briefly that they are hardly worth mentioning at all. For example, David's disease is dismissed with the statement, "This is a rare condition of women in which there are submucous and subcutaneous hemorrhages with normal blood factors."

A convenient list of recommended texts appear at the end of each chapter. It is difficult to keep these up to date. For example, on page 665 Means' book, "The Thyroid and Its Diseases," is listed as published in 1937 although the most recent edition appeared in 1948. Similarly, on page 1387 Wiprud has a new edition of "The Business Side of Medical Practice."

All in all, this book undoubtedly has met a real need and should continue to be of help to the busy practitioner and the overburdened medical student.

Projective Techniques: A Dynamic Approach to the Study of the Personality. By John Elderkin Bell. Cloth. Price, $4.50. Pp. 533, with 7 illustrations. Longmans, Green & Co., 55 Fifth Ave., New York 3, 1948.

Projective technics, as the author points out, do not necessarily involve projection in the psychoanalytic sense. The term refers to a group of methods designed to reveal the dynamics of the individual personality. They do this through the presentation of somewhat ambiguous material to the patient or subject, thus leaving him free to organize the material in terms of the different aspects of his own personality.

Dr. Bell has described each projected technic in detail, evaluating each from the standpoint of its clinical usefulness, validity and reliability. He deals not only with the well known methods, such as the Rorschach, Thematic Apperception Test and Bender Visual-Motor Test, but also with little known technics.

The book is somewhat more detailed than is necessary for an introduction to the methods, but it is undoubtedly the best source of finding out "what all these technics are about." The hasty reader can find the gist of the material in the chapter summaries and then decide whether to read the entire chapter.

Dr. Bell has organized his material very well and has an excellent expository style. Although he points out that projective technics are of little value except in the hands of the skilled examiner, he believes that they "are the most promising for speedy diagnosis of the total personality. With all their present deficiencies—and the author has taken pains to point them all out—they have established for themselves a secure position in research and clinical study."

A tuberculose na vida e na obra de Dostoïevsky. Por Homero Silveira, assistente técnico da Divisão do serviço de tuberculose do Estado de São Paulo. Paper. Pp. 61. Pongetti, Rio de Janeiro, 1948.

A short monograph in Portugese by Homero Silveira deals with the subject of the cause of death of the great Russian writer Fédor Mikhailovitch Dostoievsky. Silveira stresses the fact that of the numerous biographers of Dostoievsky none was concerned with the cause of his death. That, in the reviewer's opinion, was probably due to the fact that his biographers were preoccupied with Dostoievsky's "sacred illness" which played so important a role in his life and in his literary creations. His familiarity with symptoms of tuberculosis is hardly a valid argument that he himself had been a victim of the disease. He has indeed portrayed many morbid states with remarkable skill and fidelity, in particular that of epilepsy. Dostoievsky died in 1883 in the course of a short illness (two days) punctuated by massive pulmonary hemorrhages. Silveira adduces the following facts to support his thesis that Dostoievsky died of pulmonary tuberculosis. He suffered throughout his life from frequent colds, chronic laryngitis, bronchiectasis, emphysema and occasional hemoptysis. His mother probably suffered from pulmonary tuberculosis; she died at the early age of 37. Her maid probably also died of pulmonary tuberculosis. Fiodor was exposed to tuberculosis while visiting patients in the hospital of his father. His first wife, Issayeva, died of pulmonary tuberculosis. His first child died at an early age, probably of tuberculosis meningitis. Dostoievsky was immoderate in smoking and consumption of alcoholic drinks. In support of Silveira's retrospectic diagnosis, there is the fact that tuberculosis was extremely common in Russia and that many a literary light was first stimulated and later snuffed out by that universal scourge.

Malignant Disease and Its Treatment by Radium. Volume II. By Sir Stanford Cade, K.B.E., C.B., F.R.C.S., Surgeon, Westminster Hospital, Mount Vernon Hospital and Radium Institute, London. With a foreword by Sir Ernest Rock Carling, F.R.C.P., F.R.C.S., F.F.R., Consulting Surgeon and Vice-President Westminster Hospital. Second edition. Cloth. Price, $12.50. Pp. 430, with 162-366 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

The second of four volumes dealing with cancer of the mouth, pharynx, larynx and the neck constitutes an attractive presentation of the biologic characteristics of malignant disease and its treatment by radium, which marked the first volume previously reviewed in THE JOURNAL. The illustrations are numerous and excellent. The choice of method of treatment is discussed without bias and detailed instructions are given as to the technic. In spite of the inference that the author deals only with radium, there is a combination of roentgen and radium treatment for many cases. The author's experience indicates that in the mouth and in the pharynx radium is a more reliable medium of irradiation than the roentgen rays with the usual 200 kilovolts employed up to this time. For the tongue the introduction of radium needles remains the best method. Interstitial radium is still of value in accessible lesions. Teleradium is preferable for tumors of the pharynx and larynx. Because of the thoroughness of presentation, the book should appeal to everyone dealing with malignant disease, even though he may have no special interest in radiation.

Feeding Problems in Man as Related to Environment: An Analysis of United States and Canadian Army Ration Trials and Surveys, 1941-1946. By Robert E. Johnson, M.D., D.Phil., and Robert M. Kark, M.R.C.P. Paper. Pp. 94, with 13 illustrations. [United States, Department of the Army], *Quartermaster Food* and *Container Institute for* the Armed Forces, Research and Development Branch, Office of the Quartermaster General, 1849 W. Pershing Road, Chicago 9, [n. d.].

This monograph is a critical review of data obtained on the feeding of United States and Canadian troops subjected to different environmental conditions. These conditions ranged from artic, subartic, temperate, mountain, desert and tropical to subtropical environments.

The authors state that caloric and fluid balance deficiences impaired operational efficiency more rapidly than vitamin deficiences, and they stress the need for an attractive assortment of palatable foods in the rations as being essential to troop morale and efficiency. For example, in one case 60 per cent of the available dehydrated meat and 21 per cent of the available biscuits were returned uneaten, and troop morale and efficiency declined visibly. In general, troop morale and efficiency was highest when the preferred foods, such as meat, dairy products, fruit juices and vegetables, were given in the variety commonly eaten by North American civilians.

In all climates the relative proportions of protein, fat, carbohydrates and vitamins consumed were surprisingly constant, although in different environments different needs must be met;

for example, in cold climates the outstanding need was for calories, while in the hot climates the need for fluids and salt was more outstanding.

This monograph, while primarily of interest to research workers in the field of nutrition and to the physicians serving with the armed forces, is a step forward in the direction of a more complete knowledge of nutritional requirements as they are affected by environment.

Bright's Disease. By Henry A. Christian, A.M., M.D., LL.D. [Reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work.] Cloth. Price, $9. Pp. 583-640 (327), with 40 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1948.

This monograph on Bright's disease, a component part of the Oxford Loose Leaf Medicine, is the recorded personal experience of Dr. Henry A. Christian at the bedside and in the laboratory over a period of nearly half a century. It contains an excellent discussion of the normal and pathologic physiology of the kidney and the section on pathology is well illustrated. These sections give the reader the essential background for an intelligent understanding of the clinical aspects of the disease.

The reviewer wholeheartedly concurs with the author in his emphasis on the careful and repeated examination of the urinary sediment by the physician himself.

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That chronic pyelonephritis should be included in any discussion of Bright's disease needs no argument. However, the exclusion of acute pyelonephritis from this book is regrettable. With the present armamentarium of drugs, acute pyelonephritis is amenable to treatment. Hence, one important form of chronic Bright's disease is preventable. This is in striking contrast with most other forms of chronic Bright's disease as the author himself notes on page 640: "We needs must acknowledge the impotence of much lauded preventive medicine when we are dealing with chronic Bright's disease." The proper discussion of a preventable disease which in its intricated state leads to a crippling irreversible illness is, therefore, of great importance and should be included in a monograph of this nature.

Under the heading of special types of Bright's disease the author lists separately (1) traumatic uremia: crush syndrome; myoglobinuria; (2) hemoglobinuria: blackwater fever; transfusion renal reactions, and (3) sulfonamide kidney. All of these conditions are now considered to be part of the syndrome of lower nephron nephrosis.

He advocates that as soon as oliguria develops sodium lactate and isotonic sodium chloride solution are to be employed. This is questionable advice, because most patients in the oliguric phase of the lower nephron nephritis have been shown to have hypervolemia. There is a danger of edema from the use of sodium lactate and isotonic sodium chloride solution. Despite these criticisms the book is highly recommended to all those interested in the subject. The usefulness of this monograph is enhanced by an extensive and up-to-date bibliography and an excellent index.

The Skin Problem Facing Young Men and Women. By Herbert Lawrence, M.D. Paper. Pp. 70. Timely Publications, 303 Sutter St., San Francisco, Calif., 1948.

This monograph, written for the adolescent and his or her parents, undertakes to explain the problems of acne. The clinical picture, the several causative factors, the various treatments and their rationale, the emotional reactions of the youngsters and parents, the social implications and the many misconceptions of the disease are all discussed in simple, clear language. There is a tendency to wordiness, however, and to too much repetition. There may be some criticism also of the author's overemphasis on psychogenic factors, but withal the booklet should serve a useful purpose.

Community Organization for Recreation. By Gerald B. Fitzgerald, Assistant Professor and Recreation Consultant, Division of Recreation, Department of Physical Education and Athletics, University of Minnesota, Minneapolis. Cloth. Price, $4. Pp. 352. A. S. Barnes & Company, 101 5th Ave., New York 3, 1948.

Three basic assumptions constitute the framework on which this book has been constructed, and their soundness is demonstrated by the author's development of his subject. They are: (1) unless there is recognition and acceptance of public responsibility for a recreation service no satisfactory community organization can be developed; (2) both private and voluntary groups are essential resources, and (3) laymen must accept a place (the author says with polite restraint "have a place") in community recreation planning.

Necessary orientation is provided by chapters on the concept of community recreation, the social setting of leisure and recreation and community organization backgrounds. Next are considered local, state and national approaches to community organization, as well as an excellent discussion of the place of the schools in community organization for recreation. Especially helpful are the last four chapters, in which are given data on the making of a recreation survey, the makeup of the local public recreation authority, principles of organization and community leadership. Perhaps the most significant point made is the emphasis on the need for active participation by far more members of the average community.

In addition to extensive lists of suggested readings at the end of each chapter, broken down into books, articles and other publications, a special appendix contains reviews of organization for recreation in Australia, Canada and Great Britain. This volume is thought provoking and action stimulating.

Acute Intestinal Obstruction. By Rodney Smith, M.S., F.R.C.S., Assistant Surgeon, St. George's Hospital, London. With a chapter on Radiological Diagnosis by Eric Samuel, M.D., F.R.C.S., F.F.R. Foreword by Rupert Vaughan Hudson, F.R.C.S. Cloth. Price, $5. Pp. 259, with 102 illustrations. Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1948.

Addressed particularly to English physicians, this small volume affords an excellent review of present day concepts of the treatment of intestinal obstruction. There is little that is original in this volume. The various technics of intestinal intubation, fluid balance and protein replacement and the use of radiography are stressed. Considerable emphasis is placed on chemotherapy. A fuller account of blood chemical changes would be of value, stressing the advantage of such determinations in assessing the status of the patient at any time. The author advocates early surgery in obstruction of the large intestine and points out the significance of a competent ileocecal valve (he still regards it as a sphincter). The therapy of small bowel obstructions with adequate analysis of pathology and classification of varieties is well described. The illustrations are useful and the style is somewhat effusive, but the contents of this book are of value to surgeons.

Discoverers for Medicine. By William H. Woglom, M.D. Cloth. Price, $3.75. Pp. 229 with illustrations. Yale University Press, 143 Elm St., New Haven 7, Conn.; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1949.

The author names some of the "amateurs" who have made scientific discoveries or who have done significant work which led to notable advances in medicine. Even princes and kings have not distained to be amateurs of science. Witness Charles II, founder of the Royal Society of London, at work in his "chymical" laboratory. The author says that Lord Cavendish, "living on mutton," learned the composition of water. Stephen Hales, a clergyman, was the first to determine the blood pressure. Amateur scientists flourished particularly in England. Joseph Priestley, also a clergyman, occupied himself with the chemistry of gases. The origin of some medical discoveries rests on "folk beliefs" and is lost "in the mist of time." Benjamin Rush, one of the great figures in American medicine, the author says, told his pupils that they could learn useful methods from quacks and old women. On the other hand, medicine has given generously to art, other sciences and politics, such names as Sir Thomas Browne, best known for his "Religio Medici": Oliver Goldsmith, S. Weir Mitchell, A. Conan Doyle, Oliver Wendel Holmes, Sir Francis Seymour

Fundamentals of Internal Medicine. By Wallace Mason Yater, A.B., M.D., M.S., Director, Yater Clinic, Washington, D. C. Third edition. Cloth. Price, $12. Pp. 1451, with 315 illustrations. Appleton-Century-Crofts Company, Inc., 35 W. 32d St., New York 1, 1949.

The first edition of this book appeared in 1938. It originally was designed to present the essentials of internal medicine in the simplest possible form for students and practitioners. This objective has been achieved.

There are eighteen contributors in addition to Dr. Yater. Nevertheless, the simple style and concise presentation has been maintained throughout. The four closing chapters are somewhat unusual and deal, respectively, with "Symptomatic and Supportive Treatment," "Inhalational Therapy," "Clinical Values and Useful Tables" and "The Physician Himself," the latter including brief discussions of internships, licensure, specialist certification, medical ethics and similar nonscientific material, all of which is interesting and useful.

Dr. Yater remarks in the preface to this edition that he was struck with the tremendous number of changes and additions necessary. Indeed, this problem must have been faced by everyone revising a textbook during the past few years.

The attempt at simplification may have gone too far in some cases. Most of the rarer diseases are discussed so briefly that they are hardly worth mentioning at all. For example, David's disease is dismissed with the statement, "This is a rare condition of women in which there are submucous and subcutaneous hemorrhages with normal blood factors."

A convenient list of recommended texts appear at the end of each chapter. It is difficult to keep these up to date. For example, on page 665 Means' book, "The Thyroid and Its Diseases," is listed as published in 1937 although the most recent edition appeared in 1948. Similarly, on page 1387 Wiprud has a new edition of "The Business Side of Medical Practice."

All in all, this book undoubtedly has met a real need and should continue to be of help to the busy practitioner and the overburdened medical student.

Projective Techniques: A Dynamic Approach to the Study of the Personality. By John Elderkin Bell. Cloth. Price, $4.50. Pp. 533, with 7 illustrations. Longmans, Green & Co., 55 Fifth Ave., New York 3, 1948.

Projective technics, as the author points out, do not necessarily involve projection in the psychoanalytic sense. The term refers to a group of methods designed to reveal the dynamics of the individual personality. They do this through the presentation of somewhat ambiguous material to the patient or subject, thus leaving him free to organize the material in terms of the different aspects of his own personality.

Dr. Bell has described each projected technic in detail, evaluating each from the standpoint of its clinical usefulness, validity and reliability. He deals not only with the well known methods, such as the Rorschach, Thematic Apperception Test and Bender Visual-Motor Test, but also with little known technics.

The book is somewhat more detailed than is necessary for an introduction to the methods, but it is undoubtedly the best source of finding out "what all these technics are about." The hasty reader can find the gist of the material in the chapter summaries and then decide whether to read the entire chapter.

Dr. Bell has organized his material very well and has an excellent expository style. Although he points out that projective technics are of little value except in the hands of the skilled examiner, he believes that they "are the most promising for speedy diagnosis of the total personality. With all their present deficiencies—and the author has taken pains to point them all out—they have established for themselves a secure position in research and clinical study."

A tuberculose na vida e na obra de Dostoïevsky. Por Homero Silveira, assistente técnico da Divisão do serviço de tuberculose do Estado de São Paulo. Paper. Pp. 61. Pongetti, Rio de Janeiro, 1948.

A short monograph in Portugese by Homero Silveira deals with the subject of the cause of death of the great Russian writer Fédor Mikhailovitch Dostoievsky. Silveira stresses the fact that of the numerous biographers of Dostoievsky none was concerned with the cause of his death. That, in the reviewer's opinion, was probably due to the fact that his biographers were preoccupied with Dostoievsky's "sacred illness" which played so important a role in his life and in his literary creations. His familiarity with symptoms of tuberculosis is hardly a valid argument that he himself had been a victim of the disease. He has indeed portrayed many morbid states with remarkable skill and fidelity, in particular that of epilepsy. Dostoievsky died in 1883 in the course of a short illness (two days) punctuated by massive pulmonary hemorrhages. Silveira adduces the following facts to support his thesis that Dostoievsky died of pulmonary tuberculosis. He suffered throughout his life from frequent colds, chronic laryngitis, bronchiectasis, emphysema and occasional hemoptysis. His mother probably suffered from pulmonary tuberculosis; she died at the early age of 37. Her maid probably also died of pulmonary tuberculosis. Fiodor was exposed to tuberculosis while visiting patients in the hospital of his father. His first wife, Issayeva, died of pulmonary tuberculosis. His first child died at an early age, probably of tuberculosis meningitis. Dostoievsky was immoderate in smoking and consumption of alcoholic drinks. In support of Silveira's retrospectic diagnosis, there is the fact that tuberculosis was extremely common in Russia and that many a literary light was first stimulated and later snuffed out by that universal scourge.

Malignant Disease and Its Treatment by Radium. Volume II. By Sir Stanford Cade, K.B.E., C.B., F.R.C.S., Surgeon, Westminster Hospital, Mount Vernon Hospital and Radium Institute, London. With a foreword by Sir Ernest Rock Carling, F.R.C.P., F.R.C.S., F.F.R., Consulting Surgeon and Vice-President Westminster Hospital. Second edition. Cloth. Price, $12.50. Pp. 430, with 162-366 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

The second of four volumes dealing with cancer of the mouth, pharynx, larynx and the neck constitutes an attractive presentation of the biologic characteristics of malignant disease and its treatment by radium, which marked the first volume previously reviewed in The Journal. The illustrations are numerous and excellent. The choice of method of treatment is discussed without bias and detailed instructions are given as to the technic. In spite of the inference that the author deals only with radium, there is a combination of roentgen and radium treatment for many cases. The author's experience indicates that in the mouth and in the pharynx radium is a more reliable medium of irradiation than the roentgen rays with the usual 200 kilovolts employed up to this time. For the tongue the introduction of radium needles remains the best method. Interstitial radium is still of value in accessible lesions. Teleradium is preferable for tumors of the pharynx and larynx. Because of the thoroughness of presentation, the book should appeal to everyone dealing with malignant disease, even though he may have no special interest in radiation.

Feeding Problems in Man as Related to Environment: An Analysis of United States and Canadian Army Ration Trials and Surveys, 1941-1946. By Robert E. Johnson, M.D., D.Phil., and Robert M. Kark, M.R.C.P. Paper. Pp. 94, with 13 illustrations. [United States, Department of the Army], Quartermaster Food and Container Institute for the Armed Forces, Research and Development Branch, Office of the Quartermaster General, 1849 W. Pershing Road, Chicago 9, [n. d.].

This monograph is a critical review of data obtained on the feeding of United States and Canadian troops subjected to different environmental conditions. These conditions ranged from artic, subartic, temperate, mountain, desert and tropical to subtropical environments.

The authors state that caloric and fluid balance deficiences impaired operational efficiency more rapidly than vitamin deficiences, and they stress the need for an attractive assortment of palatable foods in the rations as being essential to troop morale and efficiency. For example, in one case 60 per cent of the available dehydrated meat and 21 per cent of the available biscuits were returned uneaten, and troop morale and efficiency declined visibly. In general, troop morale and efficiency was highest when the preferred foods, such as meat, dairy products, fruit juices and vegetables, were given in the variety commonly eaten by North American civilians.

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Haden, Thomas H. Huxley, Sun Yat-sen and Georges Clemenceau. After the interesting introduction, the author reviews at length the background of various medical discoveries in chapters under such titles as Vaccination; Blood pressure; The Laryngeal Mirror; Eyeglasses and Spectacles, and Heredity. Gregor Mendel's epic work is reviewed, as is phagocytosis, with which Metchnikoff's name is inseparable, and roentgen rays (Wilhelm Conrad Roentgen).

This book emphasizes a fact which is generally acknowledged: medicine is not only indebted to many persons who worked outside its ranks but has often been inspired to take up ideas of humble origin and work them through to bring forth discoveries that have been of great benefit to mankind.

Voluntary Parenthood. By John Rock, M.D., and David Loth. Cloth. Price, $3. Pp. 308. Random House, Inc., 457 Madison Ave., New York 22, 1949.

The practitioner of medicine who is frequently confronted with the problems of reproduction will find "Voluntary Parenthood" valuable and interesting. This book serves as an accurate scientific guide to parenthood, both voluntary and involuntary. It is written in a manner readily understandable to the layman, so that parents, couples desiring enlightenment on mating problems and teachers will find it a most acceptable source of information. The criteria of fertility and the causes and treatment of infertility are described with authoritative accuracy. Taboos and faulty ideas concerning mating problems are justly exposed. Methods of suppression of fertility are detailed and evaluated in the light of statistical data quoted from the medical literature. "Voluntary Parenthood" deserves broad acceptance by physicians and also by individuals or groups interested in the problems of parenthood and its control.

Human Nutrition. By V. H. Mottram, M.A. Cloth. Price, $2.75. Pp. 267, with 9 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1948.

This compact pocket-size book, written by a former professor of physiology at King's College of Household and Social Science, University of London, presents a body of important information on nutrition in a manner that the intelligent layman will understand. The author succeeds admirably in stimulating and maintaining interest. He reviews fundamentals of nutrition and indicates how these may be applied to both individual and group needs. For the physician who wishes to refer a patient to a useful text on foods and their utilization, this book is a good choice. Teachers will find it valuable as supplemental reading for students. Wars, depressions and periods of adjustment have forced many to give serious thought to the fundamental importance of food in the world situation. For those who recognize the need for a virile national nutrition program this book will be of special interest.

Mathematical Methods for Population Genetics. By Gunnar Dahlberg, Head of the State Institute of Human Genetics, Uppsala, Sweden. Cloth. Price, $4.50. Pp. 182, with 32 illustrations. Interscience Publishers, 215 Fourth Ave., New York 3; S. Karger, Holbeinstrasse 22, Basel, 1948.

The science which concerns the genetics of human population is growing rapidly. This small book, which is a translation of a German edition published in 1943, is one of the first attempts to place under one cover the mathematic methods which are so essential to an analysis of the problems of this new science. The early sections of the book deal with the effects of different mating systems on the genetic structure of a population. Later sections concern the effects of selection, mutation and geographic as well as social isolation. The last section is a summary of the interactions of these various factors.

Although some will disagree with some of the ideas expressed in the book and consider many of the mathematic expressions or terms unfortunate choices, the book is a valuable one. It may well serve as a starting point in a study of the genetics of human populations and also serve as a stimulus to those who already are working in this new field. The book should be of value to the clinician who is interested in populational aspects of inherited human variations.

Cold Spring Harbor Symposia on Quantitative Biology: Volume XIII: Biological Applications of Tracer Elements. Cloth. Price, $7. Pp. 222, with illustrations. Long Island Biological Association. The Biological Laboratory, Cold Spring Harbor, N. Y., 1948.

Each of the previous symposiums has dealt with a single, though broad, problem in the borderline areas of biology, physics, chemistry and mathematics. The present symposium differs in that it centers on a method which is applicable to many problems. The primary emphasis is on the results obtained in biologic experimentation, rather than on the questions of production of tracer compounds or of the methods applied in their use.

This volume contains twenty-five contributions, including studies on lipids, radioisotopes, purine metabolism and biosynthesis of porphyrins. The authors have contributed original knowledge and speak with authority on their respective fields. However, *this is obviously not a book for the average* general practitioner or internist. It is a valuable reference work for the physiologist, biochemist and pharmacologist and for the physician who wishes to use tracer elements in the diagnosis or treatment of disease.

Practical Lessons in Psychiatry. By Joseph L. Fetterman, M.D., Director, the Fetterman Clinic, Cleveland, Ohio. Cloth. Price, $5.75. Pp. 342. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1949.

The author offers this book to achieve a better understanding of common neuropsychiatric conditions. It consists of 348 pages of tangible and everyday problems of patients as seen at the bedside, in the clinic and in the office. It is readable and understandable. The author states that it was presented and published for use by general practitioners, psychologists, social workers, nurses and personnel advisers who share the responsibility of guiding those who are mentally ill. It has eleven chapters and consists of three chapters on the patient and psychoneuroses; the fourth, fifth and sixth divisions discuss manic-depressive states (chiefly depressions), schizophrenia and electrocoma therapy of psychoses; chapter seven takes up psychopathic personality; chapter eight, toxic and organic psychoses; chapter nine, neurosyphilis; chapter ten, epilepsy, and chapter eleven the physical and mental sequelae of head trauma. There is a small bibliography after each chapter. This book will help the general practitioner in understanding some of his patients' problems and difficulties.

Minor Surgery. Edited by Sir Heneage Ogilvie, K.B.E., D.M., M.CH., and William A. R. Thomson, M.D. With an introduction by Lord Webb-Johnson, K.C.V.O., C.B.E., D.S.O. Second edition. Cloth. Price, 14s. Pp. 192, with 34 illustrations. Published on behalf of The Practitioner, 5 Bentinck St., London, W.1, by Eyre & Spottiswoode, Ltd., 14-16 Bedford St., London, W.C.2, 1949.

Designed for use by the general practitioner, this book is one of a series of practitioner handbooks. The introduction by Lord Webb-Johnson spends several hundred words in defining the term "minor surgery" and points out that it often includes grave problems. The text is a brief résumé of some of the lesser surgical problems which fall into the category of minor surgery. In general the advice given is sound, and the few technics described are well done. In this country the use of coagulants for the treatment of burns has been abandoned. It is surprising, therefore, to find such a method given priority over the use of simple pressure dressings.

Dizionario Inglese-Italiano per le Scienze Mediche. A cura di Ruggero Marconi e Elena Zino. Cloth. Price, 2400 lire. Pp. 565. Edizioni Minerva medica, Via Martiri della Libertà, 15, Turin, 1949.

This English-Italian Medical Dictionary is primarily meant for the Italian medical profession. Although there is for the American medical scientist more need for an Italian-English publication, it will still be of good use for those interested in Italian medical literature. Many of the terms in this work are either rarely used or obsolete and could have been deleted without materially decreasing its usefulness. However, this should not be a point of major criticism, because, on the other hand, it includes many up-to-date terms which are not to be found in technical dictionaries of similar nature.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

VITAMINS IN BREAST MILK

To the Editor:—It is my belief that even a breast-fed infant requires a vitamin supplement, particularly vitamins D and C. My colleagues agree in reference to vitamin C but state that sufficient vitamin D is contained in the mother's milk to supply the infant's needs. In your reply would you please supply references.

Wenonah King Thom, M.D., Chico, Calif.

Answer.—The milk of a healthy mother whose diet is nutritionally adequate contains sufficient amounts of all the nutritional factors necessary for an infant with the exception of iron, vitamin D and possibly thiamine. Nature presumably intended that vitamin D be obtained from the sun (Jeans, P. C., and Marriott, W. M.: Infant Nutrition, ed. 4, St. Louis, C. V. Mosby Company, 1947).

The following figures represent vitamin values (per hundred grams) of average human milk (Macy, I. G.; Williams, H. H.; Pratt, J. P., and Hamil, B. M.: *Am. J. Dis. Child.* **70**: 135-192 [Sept.] 1945).

Vitamin A	290 I.U.
Thiamine	14.0 micrograms
Riboflavin	37.0 micrograms
Nicotinic acid	0.183 mg.
Ascorbic acid	5.0 mg.
Vitamin D	5 I.U.

Of course, the actual values found in any sample of milk will vary with the diet of the mother.

It can be seen that on the basis of 24 ounces (680 Gm.) of milk per day an infant will receive more than the 30 mg. of ascorbic acid, which is the recommended dietary allowance of the Food and Nutrition Board of the National Research Council. It is advisable, however, to add vitamin D to the diet of breast-fed infants, since it is difficult for them otherwise to obtain sufficient amounts of this vitamin.

PECULIAR YELLOWISH PIGMENTATION OF THE SKIN

To the Editor:—Over a period of years I have noticed slow development of a peculiar yellowish pigmentation of the skin, giving it an oriental color cast. Recently I had a small mole removed from my back. The healing of this dime-sized wound was slow. Because of the skin color, the dermatologist asked about my hemoglobin, which is 95 per cent, the highest it has been in many years. Under ultraviolet rays my skin is a startling yellowish green, different from the so-called normal bluish color. The only symptoms associated with this pigmentation are extreme sensitivity to sunlight and easy fatigability. What studies would you suggest? Routine physical and laboratory studies, including study of plasma proteins, revealed nothing abnormal.

Charlotte M. Biddle, M.D., Wayzata, Minn.

[This inquiry was referred to two authorities, whose respective replies follow.—Ed.]

Answer.—A combination of symptoms which includes pigmentation, easy fatigability and sensitivity to sunlight should suggest the possibility of both Addison's disease and porphyria. Presumably causative factors of an external nature, such as physical or chemical agents, and cutaneous diseases have been ruled out, and routine studies should have eliminated from consideration also lymphoblastoma, jaundice, hepatocholecystic disease and anemias. It is assumed that all drugs, but particularly arsenic, gold, bismuth and quinacrine hydrochloride, and argyrosis have been ruled out. Such yellowing entities as senile elastosis and pseudoxanthoma elasticum are readily recognized by histologic study of a section of the skin. In carotinoid pigmentation, noticeable on the palms and soles, carotene may be recovered in the blood serum and urine.

Answer.—It would be helpful to know whether the inquirer was in active service with the Armed Forces during the last war. In recent years the most common cause of unnatural-looking, nonicteric, yellowish pigmentation "giving the skin an oriental cast" has been the ingestion of quinacrine hydrochloride over a prolonged period, as carried out routinely in the Pacific and Southern European theaters for suppression of malaria. Such treatment has caused discoloration of the skin similar to that described by the inquirer in many persons. The pigment fluoresces with a bright greenish yellow color under ultraviolet rays (Lutterloh, H., and Shallenberger, L.: *Arch. Dermat. & Syph.* **53**: 349-354 [April] 1946. Ginsberg, J. E., and Shallenberger, P. L.: J. A. M. A. **131**: 808-809 [July 6] 1946. Kierland R. R.; Sheard, C.; Mason, H. L., and Lobetz, W. C.: ibid. **131**: 809-810 [July 6] 1946). These authors have also noted a brilliant fluorescence of the nails in these patients. Quinacrine pigmentation usually is more pronounced on exposed parts and may persist for several years after the medication has been discontinued. So far, no therapeutic suggestion to hasten the absorption of the pigment has been forthcoming. Some patients with quinacrine discoloration have complained of light sensitivity, but this symptom has never been particularly pronounced or caused any serious disturbance. Still it is possible that this compound, like other fluorescent dyes, acts as a photosensitizer. Anemia and exhaustion have been reported to augment the intensity and duration of the quinacrine pigmentation (Shallenberger).

Clinically, a somewhat similar color shade is seen in carotinoid pigmentation of the skin (aurantiasis cutis, Baeltz) which occurs as the result of excessive ingestion of carrots, squash, or other vegetables and fruits rich in carotene. In this condition the skin has a bright canary to deep orange-yellow color as contrasted with the "dirty yellow" shade of quinacrine pigmentation. Since the pigment accumulates in the horny layer of the skin, the most intensely colored areas are the palms and soles. Under filtered ultraviolet light the fluorescence is almost pure green and is not brilliant as in quinacrine pigmentation.

SWEET TASTE AND ARTERIOSCLEROSIS

To the Editor:—A 67 year old man has a diagnosis of hypertensive heart diisease with myocardial damage, cardiac enlargement, and anginal syndrome. An electrocardiogram of April 19, 1949, which included leads 1, 2, 3 and CF_1 to CF_6, inclusive, showed depression of ST_1 and ST_2, a Q_1 of 6 mm., inversion of TCF_4 and TCF_5 and diphasic TCF_6 with depression of $STFC_4$, $STFC_5$ and $STFC_6$ indicative of coronary insufficiency. Results of other laboratory tests of April 19 are as follows: 4,700,000 red blood cells, 8,500 white blood cells, 92.9 per cent hemoglobin, 29.5 mg. nonprotein nitrogen, 1.1 mg. creatinine and 90 mg. blood sugar. The sedimentation rate was 21 mm. and the basal metabolic rate —1 per cent. The blood pressure on April 16 was 180 systolic and 90 diastolic in the left arm and 180 systolic and 92 diastolic in the right arm. The oscillometeric test showed a reading of zero in the right and left midcalf with the patient lying down. Fluoroscopic examination showed the heart to be enlarged moderately to the left and clear lung fields. Eight months ago the patient experienced an extremely sweet taste in the mouth, and at night he had an excess amount of saliva. Hot food seemed to cause more trouble. There was no history of nausea or vomiting, but the patient is constipated. He smokes 6 cigarets a day. Can you suggest an explanation for the sweet taste and possible treatment?

Harry R. Desne, M.D., St. Petersburg, Fla.

Answer.—The patient described would seem to have hypertensive coronary heart disease with a rather characteristic hypertensive electrocardiographic pattern and peripheral arteriosclerosis. However, the symptoms of salivation and sweet taste are not characteristic and are apparently uncommon in such involvement of the heart and arteries. Therefore it would seem almost certainly related to some factor other than the cardiovascular disease.

An early symptom of diabetes is a persistent sweet taste in the mouth, due to sugar excreted in the saliva. Appropriate tests should be made to exclude this possibility. The seventh and ninth cranial nerves transmit taste sensation from the tongue to the brain stem, while the tenth nerve serves the same purpose for taste buds not located on the tongue. All have a common sensory nucleus in the medulla, the nucleus of the tractus solitarius.

It is likely that a single taste bud reports only one kind of sensation—sweet, bitter, salty or sour. A peripheral lesion in the mouth or throat involving numerous taste buds would probably not be associated with the response of sweetness only, despite concentration of sweet taste receptors toward the tip of the tongue at this age. A reasonable explanation for the sweet sensation is a pathologic reflex through the vagus to the nucleus of the tractus solitarius or vascular disease in the region of this nucleus.

If the latter were the case, possibly a short period of trial with nicotinic acid, 50 mg. four times daily, might result in sufficient vasodilatation to improve the patient symptomatically. Also, thorough cocainization of the mouth and throat should have no effect on the annoying sweet taste. The salivation is probably a simple reflex resulting directly from the taste disturbance.

DIVERTICULA OF STOMACH

To the Editor:—A 34 year old woman was admitted with numerous complaints, including dissatisfaction with her previous doctors, vomiting two hours after a meal, without apparent relationship to exertion, and when she experienced hunger, and weight loss of 15 pounds (7 Kg.). Illness began one month previously with a persistent sore throat that did not yield to penicillin therapy. Additional complaints, most of which began somewhat before her arrival in Alaska, are fatigability, pain in the thoracic portion of the spine, diarrhea, shortness of breath on exertion, cramping in the lower part of the abdomen, palpitations and headache. There is a previous history of severe pain in the right arm and shoulder, for which she had been hospitalized. No definite diagnosis was given and recovery was spontaneous. Physical examination revealed a small, asthenic woman, appearing somewhat older than her stated age, with a large amount of lymphoid tissue in the posterior nasopharynx. The eyes, ears, nose, throat, chest, heart, thoracic part of the spine and extremities were normal. The anal sphincter was moderately spastic, with hard feces in the rectum. The patient at this time complained of a feeling of "something protruding in the vagina." Bimanual examination was done in the supine and standing positions, and results were normal. Complete neurologic examination revealed no abnormalities. As a child she was raised by an aunt and had always understood that her father was dead and her mother unable to support her. She later learned that her father was alive. Results of the blood cell count, urinalysis, serologic examination and roentgenograms of the chest and portion of the spine were all normal. Gastrointestinal examination showed a constant pool of barium approximately 15 mm. in diameter, extending from the lesser curvature of the stomach at the junction of the corpus and cardia and suggesting a gastric diverticulum. Consultation with eye, ear, nose and throat specialists suggests that resection of the pharyngeal lymphoid tissue be done when the patient's physical condition permits. The patient's two attending physicians believe that she has a definite neurosis and that while surgical treatment is indicated it will not alter the general picture. I would like to know whether the gastric diverticulum is a likely cause of the nausea, vomiting and weight loss. If so, is medical or surgical treatment indicated? Can you give any references in the literature?

M.D., Washington.

Answer.—Diverticula of the stomach and duodenum usually do not produce symptoms, and the wise gastrointestinal surgeon rarely touches them. If, as probably is the case here, the diverticulum has been there from infancy, if it were going to produce symptoms it probably would have produced them long before the age of 34 years. If this diverticulum were to produce symptoms, one would expect them to be mainly those of irritation and spasm at the cardia. The most significant point in this case is that the woman has symptoms all over her body, most of which can best be explained on the basis of a nervous or unhappy state. Even if this woman had gallstones or a duodenal ulcer, surgical treatment would certainly not make her over. It might not even stop the vomiting. She has a good setup for neurosis because of her childhood unhappiness. Removal of her tonsillar tissue almost certainly will do her little good.

It is possible that a wise psychiatrist could help by finding out how much resentment she feels against her mother and how much harm such resentment is doing her. It is possible, also, that if one knew more about the parents, who deserted this woman, one would be able to determine the source of much of her nervousness.

Practically all the men who have written of diverticula of the stomach say that in most cases these little pouches do not produce symptoms. Unfortunately, the surgeons who have operated on some patients do not give enough information as to the condition of the patient during the years following the operation. The important thing is whether the patient lost all the symptoms.

In an excellent paper, Rivers, Stevens and Kirklin of the Mayo Clinic (Rivers, A. B.; Stevens, A. G., and Kirklin, B. R.: Diverticula of the Stomach, *Surg., Gynec. & Obst.* 60:106-113 [Jan.] 1935) reported a number of cases and stated that the general opinion of writers on the subject is that most diverticula cause no definite symptoms.

TOXICITY OF METHYL BROMIDE

To the Editor:—What are the lesions of the central nervous system caused by vapors of methyl bromide? What are the signs and symptoms? What is the prognosis in a case of intoxication by methyl bromide with restless coma followed by a pseudobulbar syndrome? What measures are taken in the United States to avoid this intoxication as an occupational hazard in the industry of chemical fire extinguishers?

Jean Enderle, M.D., Brussels, Belgium.

Answer.—Methyl bromide is extraordinary in the severity of its injurious properties; it is perhaps not less than thirty times as harmful as its kindred substance, ethyl bromide. While decomposition into methyl alcohol and simple bromides occurs, the essential toxic molecule is that of the methyl bromide. Proportionate quantities of methyl alcohol and sodium bromide administered simultaneously induce responses dissimilar in kind and severity. Moreover, this decomposition process explains why an intake of methyl bromide, unlike most inhaled gases, never reaches a state of equilibrium and the damaging process proceeds.

In acute poisoning, pulmonary edema overshadows all other features, but, in the delayed state or chronic type, the area of predilection is the meninges and basal brain tissues. The ultimate lesion appears to center about a property of this organic bromide to penetrate cellular tissue everywhere or possibly only selectively. Other bromides apparently act only extracellularly, but the methyl bromide may pass the cell wall and decompose in the intracellular fluid. The resulting nervous system manifestations include: visual disturbances, speech defects, disorientation, hallucinations, mania or depression, convulsive states, tremors and temperature irregularities. The total number of well investigated cases is low. Therefore, statements as to prognoses must be safeguarded. The present consensus is that, if the acute phase is not fatal, the delayed responses involving the central nervous system ordinarily may be expected to disappear but only after a long period, representing many months. Victims of methyl bromide poisoning are peculiarly prone to the development of neuroses which sometimes are intractable.

Methyl bromide has unquestioned value as a fire extinguisher but is too dangerous for commendable use and is falling into disuse. Certain states and cities now legally ban its use for fire-fighting purposes. The great danger is from possible leaks, leading to prospective injury or fatality wherever such extinguishers with leaks may be stored. It has been stated that fire extinguishers containing methyl bromide have been prohibited by the National Board of Fire Underwriters. Wherever methyl bromide may come into use, the atmospheric concentration should not exceed 50 parts per million, and a figure of 20 parts per million or lower may be more acceptable. Emergency exposure in spaces containing methyl bromide call for the use of pressure hose masks or suitable canister respirators.

SOY BEANS, HEXANE AND HYPERTENSION

To the Editor:—Information is requested on the effect of hexane on blood pressure among workers in a local soy bean extraction plant. Several men claim to have hypertension after working a year or two in this department. In the process soy bean flakes are soaked in hexane, which removes the oil. The hexane then is recovered by fractional distillation. The entire process is carried out in carefully closed equipment with adequate vents and air circulation. Occasionally when the machinery is cleaned, and if airing is not sufficient, men working with the cleaning of the machinery complain of nausea and vertigo. One man, who was partially overcome with the fumes a year ago and now has moderate hypertension (according to his physician), becomes nauseated and has headache whenever he is exposed to the slightest odor of hexane. Is this amount of hexane enough to cause hypertension? This particular hexane is a petroleum distillate with the commercial brand name of Skelly Sol-B.

James M. Burk, M.D., Decatur, Ind.

Answer.—Hexane is a member of the methane series and, as such, is supposed to possess only low toxicity. However, it is not a simple asphyxiant like methane but is an anesthetic and irritant. Any nasal irritant of this character first leads to transitory and minor increase in blood pressure, which, however, soon is followed by diminution in blood pressure. Neither is important. Hexane is a constituent of such petroleum fractions as naphtha, benzine and gasoline, and its toxic properties are similar to the toxic properties of these substances. Concentrations up to 2,000 parts per million of air may be breathed for 10 minutes without any symptoms. When the concentration is near 5,000 parts per million, dizziness may occur within 10 minutes. For comparative purposes, it may be observed that for a kindred substance, benzol, the upper limit of tolerance is not over 100 parts per million for prolonged inhalation.

With respect to disturbances from "the slightest odor of hexane," it is probable that these disturbances are functional. Nevertheless, it is well established that some persons who have been exposed to a heavy concentration of vapors of such substances as naphtha, gasoline and benzine later will be promptly upset by exposure to traces. The odor produces no disease, but it serves as a reminder of earlier mishaps. From the description of the work conditions, no real hypertension may be anticipated, but dizziness, headache, nausea and vomiting may appear, particularly at the time the machinery is cleaned. Extensive cleaning operations may require the worker's wearing a positive pressure respirator during the occasional short clean-up period. The commercial hexanes frequently include some pentanes, heptanes and octanes. If so, these other petroleum fractions may be regarded as possessing approximately the same level of toxicity.

ANESTHETIC INJECTIONS FOR LOW BACK PAIN

To the Editor:—I would appreciate information on treatment for a patient with chronic arthritis of the lumbosacral part of the spine and/or sacroiliac joints. The patient had been bedridden for three days when first seen. Adhesive strapping of the lower part of the back by a colleague had not helped him. Four days ago I injected the points of maximum tenderness in the lumbosacral region with 2 per cent procaine, without epinephrine —about 15 cc.—and did a block of the left sciatic nerve. The patient was much improved and went to sleep for several hours, which he had been unable to do for the previous two nights. Today he was able to come to my offiice, the pain in the spine gone but some still present in the upper medial quadrant of the left buttock. Another procaine block was done, with 10 cc. of the 2 per cent solution. Is procaine injection an accepted treatment for these conditions? What follow-up treatment is indicated?
John F. Noguera, M.D., Kingsville, Md.

Answer.—Injection of local anesthetic agents for relief of certain types of low back pain has been an acceptable adjunctive procedure for many years. However, such injections cannot be considered the treatment of choice for all patients with backache. Nor is the procedure always successful. Treatment by local injection of anesthetic agents, even though successful, should not be undertaken in lieu of thorough examination to permit an accurate diagnosis, particularly the exclusion of visceral disease and serious disorders of the musculoskeletal system.

The complexity of various inflammatory and mechanical factors involved in low back pain requires pertinent and detailed information before the underlying cause and the indications for other treatment can be accurately determined. Discussion of the diagnostic and therapeutic problems encountered in patients with low back pain will be found in such texts as Comroe's "Arthritis and Allied Conditions" (Philadelphia, Lea & Febiger, 1944, 1359 pp.) and Lewin's "Backache and Sciatic Neuritis: Back Injuries—Deformities—Diseases—Disabilities, with Notes on the Pelvis, Neck and Brachial Neuritis" (Philadelphia, Lea & Febiger, 1943, 745 pp.). Injections of local anesthetic agents are also discussed by Steinbrocker (Local Injections and Regional Analgesia with Procaine Solutions for Intractable Pain in Chronic Arthritis and Related Conditions, *Ann. Int. Med.* 12: 1917-1939 [June] 1939; Therapeutic Injections in Painful Musculoskeletal Disorders, J. A. M. A. **125**: 397-401 [June 10] 1944).

YAWS AND SYPHILIS

To the Editor:—What is the etiologic relationship between yaws and syphilis?
M.D., New York.

Answer.—The exact etiologic relationship between yaws and syphilis remains controversial. The modern conception is that yaws is a modified or primitive form of syphilis. Support for this belief is the identical structure of the causative spirochete (pallida and pertenue); similar serologic relationships and response to the same therapy. There are considerable data indicating that a person with an acquired immunity to yaws is also immune to syphilis and vice versa.

The striking differences are that yaws is not hereditary and is found most frequently in the hot, humid tropics where hygiene is poor. The neurologic and vascular systems are usually spared. The skin is primarily invaded, and childhood contamination confers adult immunity. Syphilis, on the other hand, is hereditary (congenital) and rare in the tropics. Furthermore, neurologic and vascular involvements are common in syphilis, all organs are invaded and after a cure the subject can become reinfected.

On account of their similarity the name treponematosis has been suggested. It would seem more logical to emphasize the similarity of these infections rather than their differences.

CHRONIC OTITIS EXTERNA

To the Editor:—Please outline the treatment for chronic otitis externa of fungus origin. The patient's ears became infected in Cuba in 1937.
M.D., Tennessee.

Answer.—External otitis of fungus origin should respond readily to cleanliness and the local use of a fungicide, such as 1:1,000 tincture of sodium ethylmercurithiosalicylate (merthiolate®), 1 per cent thymol in meta-cresylacetate, or 2 per cent aqueous methylrosaniline chloride. In long-standing cases, dermatitis medicamentosa frequently complicates the picture, and it may be necessary to omit the stronger fungicides and use instead 1 per cent salicylic acid in 70 per cent alcohol. An allergic dermatitis of the ears should also be considered in stubborn cases. The allergy is generally due to one or more foods, house dust or feathers.

d-AMPHETAMINE SULFATE

To the Editor:—Is there any unfavorable results from prolonged use of *d*-amphetamine sulfate (dexedrine® sulfate) in cases of nervous depression occurring in the aged? What dosage of the drug is appropriate for such cases, and what should be the maximum daily safe intake?
M.D., Texas

Answer.—Amphetamine, in overdosage in normal adults, will produce a rise of blood pressure, nervousness, tremors, sweating, palpitation and increased respiration. Severe poisoning may produce convulsions and collapse. In the aged, these reactions may occur more frequently and may be more important because of the presence of degenerative diseases of the heart and blood vessels.

Amphetamine, if used to treat an agitated depressed state in an aged person, should be given cautiously, since it may tend to exaggerate the nervousness and produce an effect opposite to the one desired. Dosage should not exceed 2.5 to 5.0 mg. as a single dose, and smaller amounts should be used initially. Increase in dosage is not necessary and is undesirable if a satisfactory response is obtained. If no response is obtained to a single dose of 5.0 mg., it is unlikely that larger doses will be productive of good results. Not more than four to five such doses should be given in any twenty-four hour period.

HYSTERECTOMY AND OOPHORECTOMY

To the Editor:—A 48 year old patient with symptoms of the menopause had a supravaginal hysterectomy for fibroids. Both ovaries were found to be normal, and the surgeon did not remove them. Is this considered good practice?
M.D., Conn.

Answer.—There is no unity of opinion among gynecologists as to whether or not ovaries which appear normal should be removed at the time of a hysterectomy. Some gynecologists never remove normal-appearing ovaries, regardless of the patient's age, whereas others take out the ovaries routinely after certain ages, varying from 40 to 45 years. Most gynecologists excise the ovaries almost routinely after 45 years of age because of the possibility that cancer may occur after operation. Cancer of the ovary is difficult to diagnose and has a low incidence of cure; hence the frequent resort to bilateral oophorectomy at the time of hysterectomy. If, however, a woman is highly emotional, it is not advisable to remove her ovaries even though she is 45 years or over, because the sudden appearance of the menopause might distinctly be harmful. In most women, however, excision of the ovaries after 45 years of age does no harm, and, although this operation leads to distressing symptoms often, these annoyances can be relieved by medication.

SALT SUBSTITUTE AND LIQUID PETROLATUM

To the Editor:—Can you furnish me with the name of a salt substitute, other than potassium chloride, that is considered harmless? Also, do you think that 1½ ounces (43 Gm.) of liquid petrolatum taken every night is harmful to a patient who has had a stroke?
J. Henry Hermetet, M.D., Macomb, Ill.

Answer.—1. A satisfactory substitute for sodium chloride has not been found. Salts containing ions foreign to the body in lieu of sodium may be dangerous (e. g., lithium); other ions may not produce a "salty" taste or may produce an objectionable taste (e. g., potassium). Monosodium glutamate has been proposed as a salt substitute because of its low sodium content, but the flavor is not truly salty and may lead to use of excessive amounts. Ammonium chloride has also been proposed, but since it is an acid salt it has definite drawbacks. Combinations of ammonium and potassium chloride are available for use and at present are considered to be the best substitutes available.

2. It is unlikely that the quantity of liquid petrolatum mentioned would be harmful when taken as suggested.

INGESTION OF REFRIGERATED SYPHILITIC BLOOD

To the Editor:—What happens to spirochetes of syphilis in blood that is stored in the refrigerator? How long are they viable? (2) What is the possibility of one's getting syphilis from ingestion of stored syphilitic blood (blood stored about one month in the refrigerator)? My son (18 months old) swallowed such blood.
M.D., Texas.

Answer.—The spirochetes of Treponema pallidum die when stored at refrigerator temperature. Their maximum period of viability is less than 96 hours. There is practically no possibility of one's contracting syphilis from the ingestion of blood stored for a month.

STAINLESS STEEL KITCHEN UTENSILS

To the Editor:—I have endeavored to find the cause of mild peripheral neuritis associated with disturbances in the veins of the forearms and arms. Gaseous poisons have been eliminated, as have the usual heavy metals causing chronic poisoning. However, there is a history of the use of "stainless steel" kitchen utensils; I wonder whether cadmium or similar metal may not be taken into the system from such "stainless steel" during its uses in cooking. I have noted that gray-black stains occur when such "stainless steel" receptacles are placed on a white table cloth.

M. Karasek, M.D., Shidler, Okla.

Answer.—"Stainless steel" for kitchen purposes contains only traces of cadmium. The commonest formula is 8:18:74 parts, respectively, of nickel, chromium and steel. Other types may include low percentages of cobalt, manganese and silicon. The nationwide use of stainless steel and aluminum utensils attests the relative harmlessness of both types. It may not be claimed that such metals are wholly insoluble. Acids from various foods attack these metals, leading to trace inclusions in victuals as consumed. Manufacturers of these products have well studied the extent of metal solution under varied conditions. The results are not alarming. Many rumors gloomily forecast evil consequences from the use of such utensils, but proof is lacking. Most of the chemicals mentioned are constant physiologic constituents of the body. No commercial "stainless steel" is utterly stainless. The black smudges mentioned may represent oxidation, or they may represent soot from cooking fuel. The association of neuritis with stainless steel as the cause may be doubted.

TUBERCULOUS MENINGITIS

To the Editor:—A 51 year old man has tuberculous meningitis secondary to far advanced silicotuberculosis. There has been definite clinical improvement following a thorough course of intrathecal streptomycin, ten weeks to date. At present he is receiving 50 mg. of streptomycin intrathecally twice weekly. How long should intrathecal therapy be continued?

Elliot A. Rouff, M.D., Los Angeles.

Answer.—It is presumed that the patient is receiving regular intramuscular injections of streptomycin in addition to the intrathecal treatment. It has not been definitely determined how long intrathecal therapy should be continued. The tendency has been, especially in Europe, where physicians have had much more experience than those in this country, to reduce gradually the intrathecal dosage of the drug over a period of several months. The lower limit of this dosage is about 25 mg. In addition, the spacing of the injections has usually been wider as time goes on. In the case presented, it will probably be best to continue the present regimen as long as the patient shows improvement of the spinal fluid, such as a reduction in pressure, a reduction in albumin and globulin, a rise in sugar, a decrease in the cell count and, of course, a disappearance of acid-fast bacilli. If the clinical symptoms of the spinal fluid remain normal for a period of several weeks, treatment may be discontinued, but it should be reinstituted if any of the symptoms reappear. A cure should not be pronounced until the patient has been in good health one, two or even three years.

CONSANGUINITY AND Rh FACTORS

To the Editor: Should married first cousins, the wife being Rh negative and the husband being Rh positive, have children? Neither family history is significant for congenital anomalies. The wife has had a thorough diagnostic examination and except for an allergic diathesis is in fairly good health. They want children but are concerned about the problem of consanguinity and the Rh-negative status.

M.D., New Jersey.

Answer.—The Rh incompatibility of the couple is not influenced by the consanguinity. In other words, the first child is certain to be normal unless the woman had received transfusions of Rh-positive blood. The outlook for later pregnancies depends on various factors, one of which is whether the husband is homozygous or heterozygous Rh positive. This may be possible to establish by tests of his blood with anti-hr' (anti-c) serum, which is now available. This serum is applicable if he is Rh_1 (CDe); if he is found to be hr' positive, heterozygosity is established, but if he is found to be hr' negative, he is homozygous. It is also advisable to test the Rh factor in the husband's parents. If one of them is Rh negative, the husband is heterozygous Rh positive. The importance of this observation is that a homozygous Rh-positive man can have only Rh-positive children, whereas he may have Rh-negative children if he is heterozygous Rh positive. The other factors determining prognosis are not yet known.

STERILIZATION OF NEEDLES TO PREVENT INFECTIOUS HEPATITIS

To the Editor:—Recently several members of the staff of one of the larger hospitals in El Paso recommended heat sterilization of needles and syringes rather than the use of chemicals. The hospital authorities compromised by requiring heat sterilization of equipment used for intravenous procedures but continued the use of chemicals for preparation of needles and syringes used for hypodermic injections. The two editorials on this subject in The Journal, *Sept. 22, 1945, and Feb. 12, 1949, both state that homologous serum jaundice may be transmitted by the injection of blood or blood fractions, by withdrawal of blood from the vein or the administration of medicaments, intravenously or intramuscularly, with improperly sterilized equipment. Neither editorial states specifically whether or not this disease may be transmitted by the more frequent hospital procedure, namely, hypodermic or subcutaneous medication. This decision becomes important in view of the decision made by this hospital. Would you kindly answer the following questions? (1) Could homologous serum jaundice be transmitted from patient to patient by needles or syringes used in hypodermic injections which are not properly sterilized? (2) How long is boiling necessary for adequate sterilization, to prevent transmission of this disease? I recently saw a patient in consultation who had jaundice almost simultaneously with her husband. Four months previously both had received a subcutaneous injection, presumably of different drugs, on the same day and in the same physician's office. The type of sterilization of needles and syringes in this case is not known, but supposedly was by boiling. (3) Could homologous serum jaundice be transmitted by the use of immune globulin?*

M.D., Texas.

Answers.—The viruses (or icterogenic agents) responsible for the naturally occurring infectious hepatitis and the serum-borne variety of the disease are among the most resistant pathogens known. They will pass through Seitz filters, will survive repeated freezing and thawing, withstand a temperature of 56 C. for thirty to sixty minutes and are not affected by dessication. They are not killed by ordinary chlorination, 1:2,000 solutions of merthiolate® (sodium ethylmercurithiosalicylate), 0.5 per cent solution of phenol in ether or 0.2 per cent solution of tricresol. Extremely small inoculums (less than 0.01 cc.) of contaminated serum have been known to produce the disease. For these reasons, it is now generally believed that improperly sterilized hypodermic needles or syringes can readily transmit homologous serum jaundice, as shown by the spread of the condition in diabetic, venereal and chrysotherapy clinics. Swedish authorities also have pointed out the increased frequency of the disease in persons who have been hospitalized, the incidence being highest in patients, such as diabetic patients, who have been subjected to repeated venipunctures or to hypodermic administration of medicaments.

The cases of hepatitis in man and wife mentioned bring to mind Bradley's statement: "When hepatitis occurs 40 to 120 days after the administration of a human blood product or other parenteral therapy, it is almost certainly homologous serum jaundice and must be treated as a disease with an appreciable mortality." This has never been disputed by anyone familiar with the problem; it seems probable in cases under consideration that improperly sterilized syringes or needles were responsible. Autoclaving or boiling for three to five minutes of such equipment is recommended. The generally employed chemical methods for sterilization are probably insufficient. Separate syringes and needles should be used for each patient. Recent reports indicate that ultraviolet irradiation will inactivate certain strains of hepatitis virus; and on the basis of this evidence, irradiated plasma has been prepared for clinical use. Clinical experience with it has not been sufficiently large to justify a final statement as to its safety.

Neither immune globulin nor human serum albumin has been shown to transmit hepatitis; the former has in fact been used (with doubtful success) as a prophylactic agent.

CANCER OF CERVIX IN JEWS AND NON-JEWS

To the Editor:—In Queries and Minor Notes (J. A. M. A. **140**: 1069 *[July 23] 1949), your answer to the query about* "Cancer of the Cervix in Jews and Non-Jews," *appears to be somewhat meager. With respect to the incidence of cancer of the cervix in Jewish women, Vineberg first called attention to the infrequency of cancer of the cervix in patients seen at* Mount Sinai Hospital, *the largest general American Jewish Hospital in* New York. *He noted only 18 patients with cancer of the cervix in 1,900 patients admitted during 1893-1906, and of these 18 only 9 were Jewish. In our study at* Bellevue Hospital (Kaplan, I. I., and Rosh, R.: Am. J. Roentgenol. **57**: 659-664 [June] 1947), *among 1,342 patients with cancer of the cervix, seen in the Radiation Therapy Department over a period of twenty-one years, only 25 were Jewish. Regarding the carcinogenic possibilities of smegma,* Plaut and Kohn-Speyer (*Science* **105**: 391 [April 11] 1947) *were able to show that human penile smegma contained a carcinogenic substance. We may then rightly consider the question of what effect circumcision has on preventing cervical cancer. The answer is yet to be noted. I am of the opinion, therefore, that one may properly conclude that the incidence of cancer of the cervix in Jewish women is low.*

Ira I. Kaplan, *M.D.,* New York.

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MANAGEMENT OF THE INJURED KIDNEY

Chairman's Address

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and
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Somewhat more than three years ago one of us (H. W. McK.) became dissatisfied with our management of the injured kidney, feeling that our treatment followed no preformed plan. For this reason, a study was made of all of the cases which we had seen at the Charlotte Memorial Hospital since 1940 in an attempt to ascertain whether we might not reach some conclusions which would permit the formulation of a working plan for the proper diagnosis and management in these cases.[1]

As a result of this study the following conclusions were reached: (1) we were not taking sufficient steps to diagnose the exact nature of the injury, that is, whether the kidney was merely contused or frankly ruptured; (2) we were content to follow the generally accepted mode of so-called conservative nonoperative management even in cases in which actual rupture of the kidney was demonstrated; (3) we were overlooking the numerous undesirable sequelae to injury of the kidney reported in the literature[2] and observed by us,[1] and (4) we were not insisting on adequate follow-up studies of the patients treated.

On the basis of this reevaluation of our cases, we have separated all traumatic injuries of the kidney into three groups, the classifications being governed not so much by the anatomic and pathologic type of the injury as by the method of diagnosis and management. We realize, of course, that no combination of diagnostic methods will afford an accurate diagnosis in every case and that exceptions will occur in any large series of cases. We propose herein to present this classification as we have conceived it and to describe the management of each group, using illustrative case histories. Since our adoption of this method of management we have treated a series of 12 patients; we will report 1 or more cases to illustrate each management group.

CLASSIFICATION

In group 1 the patient gives a history of trauma followed by mild to severe pain in the loin and microscopic to macroscopic hematuria. Shock, flank tenderness and muscle rigidity may or may not be present. A flat plate roentgenogram of the abdomen shows clear psoas muscle and renal outlines. An excretory urogram usually shows diminished or absent function from the injured kidney during the first seventy-two hours after the injury. A retrograde pyelogram demonstrates a normal collecting system without extravasation and without undue angulation of the ureter. In our opinion the kidney has been demonstrated to be anatomically normal in this group and pathologically would be classified as contused.

In group 2 the signs and symptoms listed under group 1 are present, and in addition a mass in the loin may or may not be palpated. Shock, pain, hematuria, tenderness and rigidity may be more pronounced but are not necessarily so: A. An obliteration of the renal and/or psoas outlines, if not due to gas shadows, indicates perirenal hemorrhage and places the case in group 2. B. Extravasation of the dye from the collecting system on the excretory urogram (rare in the first seventy-two hours) or retrograde pyelogram demonstrates a rupture of the collecting system and places the case in group 2. Signs A and B may both be present but may occur singly. There may also be angulation of the ureter on the pyeloureterogram, but this is not often encountered. The cases in this group consist anatomically and pathologically of rupture either of the renal parenchyma or of perirenal vessels resulting in perirenal hematoma in which patients are in sufficiently good general condition to warrant study over a seventy-two hour period. Subcapsular hematoma is also included in this group.

In group 3 the presenting feature is shock, which is progressive despite transfusion. The urinary hemorrhage is profuse and commonly results from rupture of the vascular pedicle. A mass is generally palpable; pain, tenderness and rigidity are accentuated.

MANAGEMENT AND REPORT OF CASES

Patients in group 1 should be observed and treated nonoperatively.

Case 1.—P. T., a Negro college student, aged 21, was admitted Oct. 23, 1948, shortly after he had received a blow to the left flank while playing football. He had noted gross hematuria after the injury, and a dull aching pain had developed in the flank. Examination revealed pronounced tenderness in the flank without muscle spasm or mass. The urine was only blood tinged. A flat plate roentgenogram showed clear renal and psoas muscle shadows. Excretory urograms showed no function from the lower pole of the injured kidney. A retro-

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From the Urological Service of the Charlotte Memorial Hospital.

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The photographic work was done by the Heineman Foundation and Mr. Rufus Meigs. Dr. G. Aubrey Hawes of the Department of Urology supplied case 7. Mr. Melvin Kester prepared the diagrams.

[1] Lynch, K. M., Jr.: Management of the Injured Kidney: Preliminary Report, J. Urol. **60**: 371, 1948.

[2] Colston, J. A. C., and Baker, W. W.: Late Effects of Various Types of Trauma to the Kidneys, Arch. Surg. **34**: 99 (Jan.) 1937.

grade study seventy-two hours after the injury revealed normal conditions. The urine became free of blood in twenty-four hours, and the patient was discharged four days later. A follow-up study of the kidney on March 20, 1949, five months later, revealed that the urine, phenolsulfonphthalein excretion and retrograde pyelogram were all normal. The final diagnosis was contusion of the kidney.

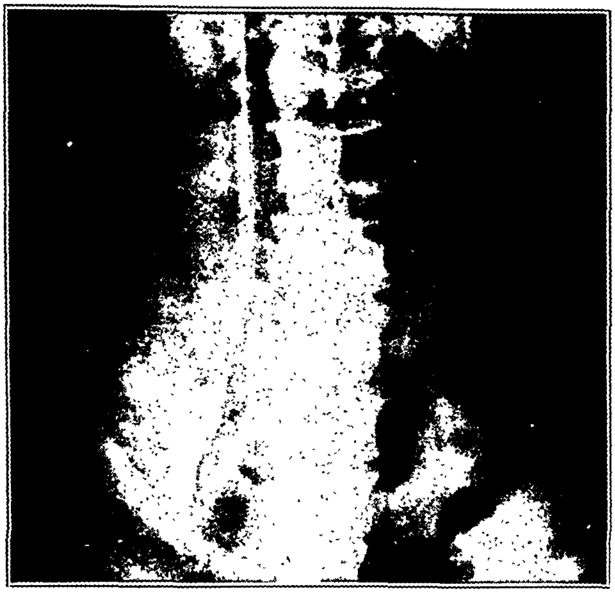

Fig. 1 (case 3).—Retrograde pyelogram showing filling defect in the lower portion of the pelvis caused by blood clots and irregular extravasation of dye into the parenchyma of the lower pole of the kidney The psoas muscle and renal outlines are obliterated on this side.

Case 2.—A. T., a sawmill worker aged 38, was admitted to the hospital because of dull flank pain and gross hematuria three days after having been struck in his right flank by a board thrown from a ripsaw. There was only moderate tenderness of the flank without muscle rigidity or a palpable mass. The flat plate roentgenogram showed clear renal and psoas muscle shadows. The excretory urogram showed poor filling on the right side. The retrograde pyelogram was normal. The hematuria cleared on the third hospital day. When the kidney was examined twelve months later, the urine, function on phenolsulfonphthalein test and retrograde pyelogram were normal. The final diagnosis was contusion of the kidney.

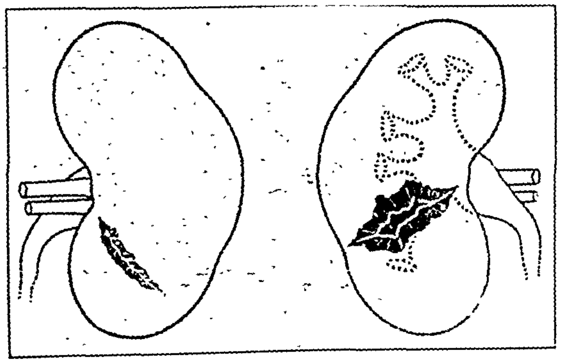

Fig. 2 (case 3).—Diagram of observations at time of operation: anterior view (left) showing superficial cortical laceration; posterior view (right) showing deep communicating rupture. This kidney was salvaged by nephrostomy drainage.

Patients in group 2 should have exploratory operations performed approximately seventy-two hours after the injury, at which time coagulation of the extravasated blood would have occurred and infarction would have become readily discernible, thereby not only facilitating the exploratory operation technically but also affording the surgeon a clearer conception of whether the kidney should be salvaged or removed, thereby minimizing the number of nephrectomies performed in this group. Salvage of the kidney may be attempted in a number of these cases by various methods, such as partial nephrectomy, ribbon gut suture over fat[3] or gelfoam[3,4] or nephrostomy drainage. We chose the McIver splinting nephrostomy tube in order to maintain the caliber and position of the ureter in face of cicatrizing scar tissue, because of the excellent drainage afforded and because of the absence of trauma on removal of the tube. We usually remove the tube seven to twelve days after the operation, believing that healing should be well advanced at this time. In our experience all wounds have healed promptly within twenty-four to forty-eight hours after removal of the tube.

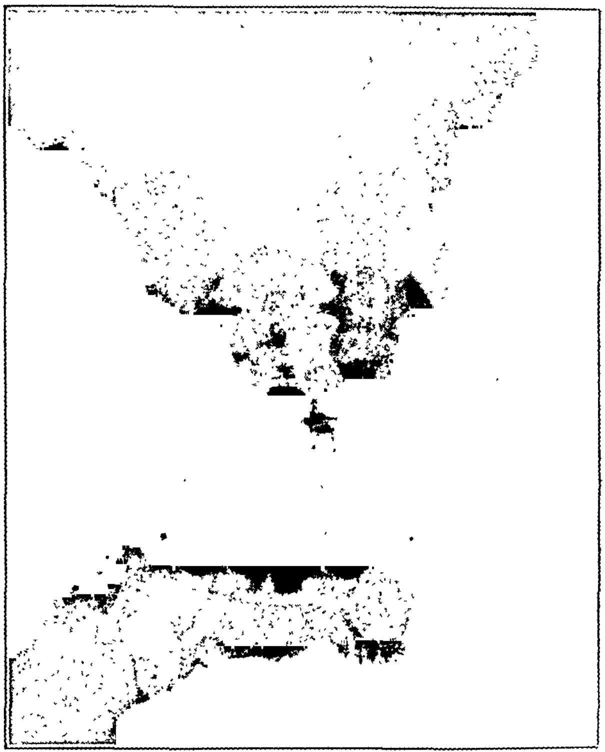

Fig. 3 (case 3).—Retrograde pyelogram two months after the operation.

Case 3.—C. S., a white man aged 38, was admitted to the hospital Sept. 21, 1947, approximately thirty minutes after a fall from a moving automobile, at which time he struck his left flank against the curb. He complained of severe pain in the left flank and appeared to be in mild shock with a blood pressure of 90 systolic and 50 diastolic. He was given ¼ grain (15 mg.) of morphine and 400 cc. of blood plasma with a resultant rise in blood pressure to 134 systolic and 80 diastolic. The left flank was rigid and exquisitely tender with no palpable mass. The urine was grossly bloody. A flat plate roentgenogram of the abdomen showed complete obliteration of the left renal and psoas muscle outlines. Excretory urograms revealed diminished function on the left with a small area of extravasation beyond the most inferior calyx. The urine gradually cleared, but the pain in the left flank persisted. On the fourth hospital day the patient was examined with a cystoscope and a catheter was passed to the left kidney, the urine from which was brown with old blood. A retrograde pyelogram showed an irregular filling defect of the lower portion of the pelvis and the inferior calices with extravasation of the dye into the

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renal parenchyma (fig. 1). An exploratory operation on the left kidney was performed immediately after cystoscopy and ninety-six hours after the injury, with a preoperative diagnosis of rupture of the lower pole of the kidney. The lumbodorsal fascia was a dark bluish black. The perirenal fascia was distended by approximately 300 to 400 cc. of old blood clots and macerated fatty tissue. There was already considerable organization about the kidney, which was freed and delivered only with difficulty. There was a deep ragged laceration on the posterior surface of the lower pole which communicated with the pelvis and a superficial laceration on the anterior surface (fig. 2). A pyelotomy was performed, and a McIver nephrostomy tube was inserted through the ruptured area without inciting hemorrhage. The patient's postoperative course was smooth, the urine becoming practically clear the day after the operation. The nephrostomy tube was removed on the eighth postoperative day, after which the wound closed promptly. The patient was discharged ambulatory and asymptomatic on the fourteenth postoperative day, at which time the urine contained only a few pus cells per high power field. Two months and eleven months postoperatively, the kidney urine was sterile on culture and a retrograde pyelogram was normal in appearance with good cupping of the inferior calices (fig. 3). Phenolsulfonphthalein dye appeared simultaneously from both sides and in equal concentration. The patient was actively working and had no complaints. The final diagnosis was communicating rupture of the lower pole of the kidney with perirenal hematoma.

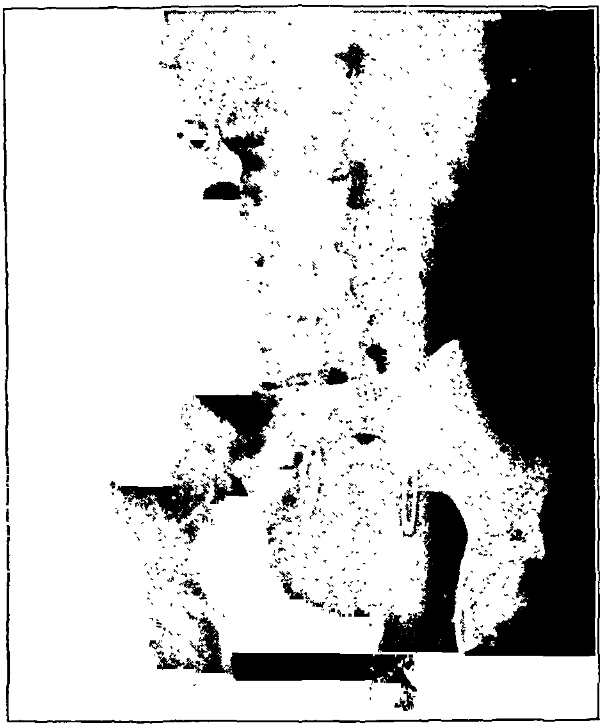

Fig. 4 (case 4).—Excretory urogram showing exceedingly poor function from the upper two thirds of the left kidney with slight but definite extravasation of dye into the parenchyma in this area. The psoas muscle and renal outlines are obliterated on this side.

We believe that if an exploratory operation had been performed on this patient on admission, a nephrectomy would have been necessary because of active hemorrhage from the area of the rupture.

Case 4.—H. W., a white girl aged 12 years, was admitted to the hospital Feb. 19, 1948, approximately forty-eight hours after she had fallen against a stone step. Rather severe pain had developed in her left flank, and she had gross hematuria. She was ambulatory on admission to the hospital and did not appear to be in much pain. The left flank was moderately tender both anteriorly and posteriorly without muscle rigidity or palpable mass. The urine was grossly bloody. A flat plate roentgenogram of the abdomen showed complete obliteration of the renal and psoas muscle shadows on the left side. Excretory urograms revealed that little dye was excreted from the upper two thirds of the kidney but that there was an irregular dispersion of this dye beyond the normal contour of the upper pelvis and caliceal systems (fig. 4). A retrograde pyelogram was not considered necessary in this case, as rupture of the upper pole of the kidney was clearly demonstrated by the flat plate roentgenogram and excretory urogram. At operation seventy-two hours after the injury the perirenal fascia was found to be bulging, to be deep blue and to contain macerated fatty tissue infiltrated with old blood. There was a laceration at the junction of the upper one third and lower two thirds of the kidney (fig. 5). This laceration extended down almost to the hilus anteriorly and just beyond the midline posteriorly. A pyelotomy was made, and a few blood clots were evacuated from the pelvis. A McIver nephrostomy tube was inserted through the laceration in the upper pole of the kidney without

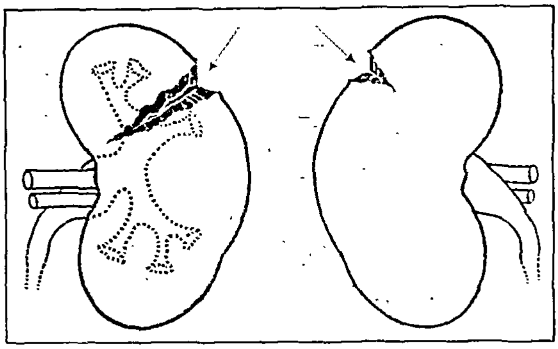

Fig. 5 (case 4).—Diagram of observations at operation. Communicating rupture is shown on anterior (left) and posterior (right) views of the kidney, which was salvaged by nephrostomy drainage

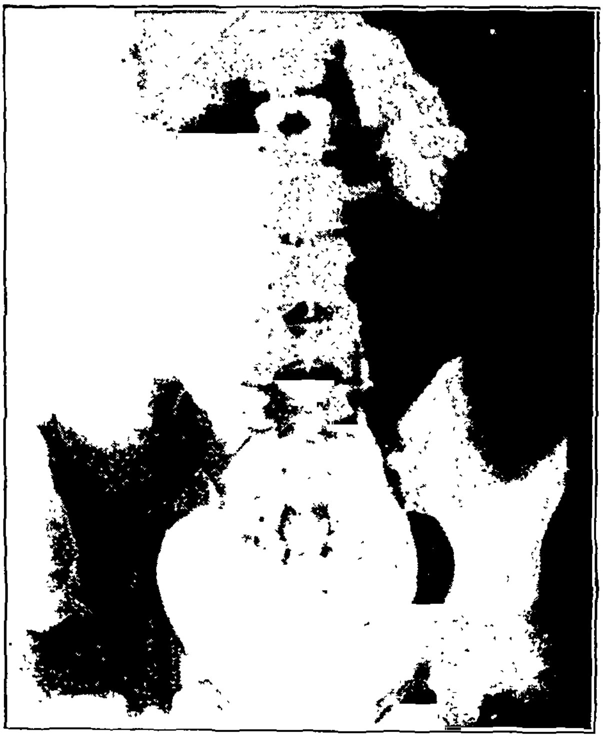

Fig. 6 (case 4).—Retrograde pyelogram thirteen months after operation. The accidental pyelotubular backflow serves to outline the indentation in the cortex at the site of the rupture.

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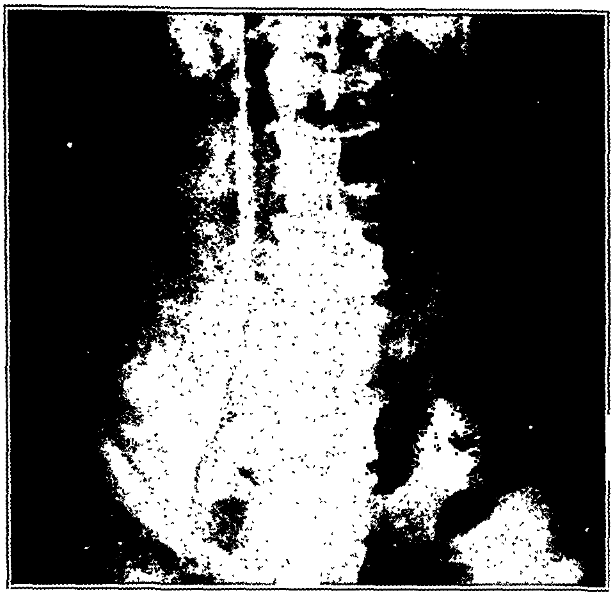

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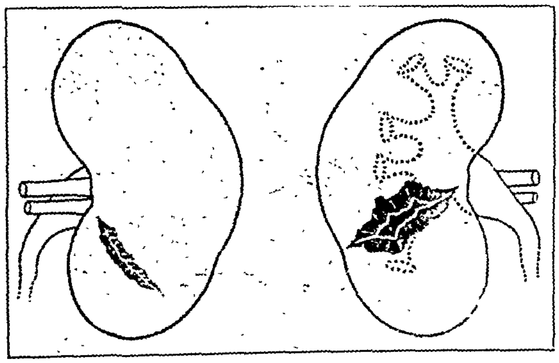

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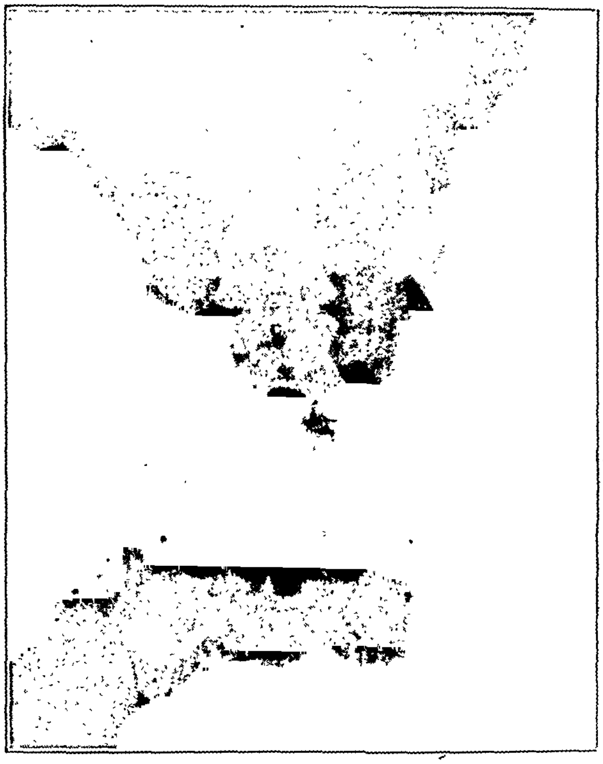

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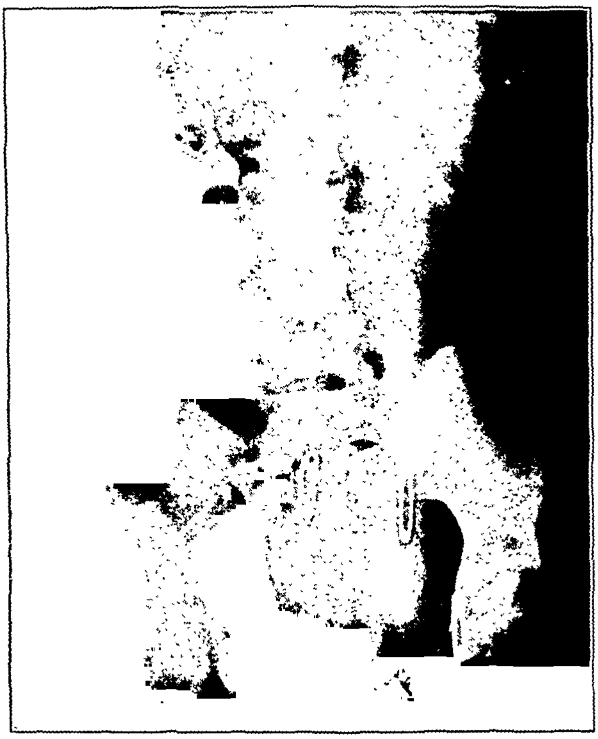

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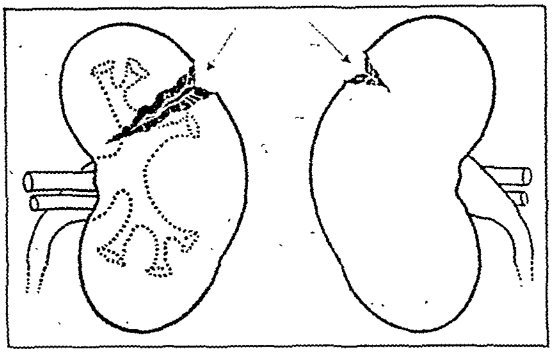

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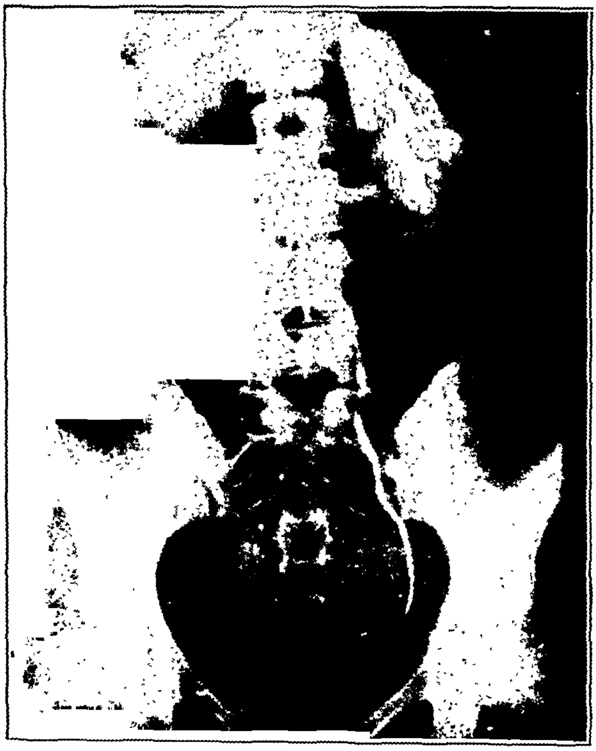

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meeting intact tissue. The urine became grossly clear twenty-four hours after completion of the surgical procedure. The nephrostomy tube was removed on the eighth postoperative day, and the wound healed promptly. Excretory urograms which were made the day prior to discharge of the patient showed good function from the upper and middle calices of the kidney with only minimal distortion and without extravasation. On follow-up examination thirteen months after the injury, the urine from the bladder and kidney was normal microscopically and was sterile on culture. There was an equal amount of phenolsulfonphthalein excreted from the two kidneys. A retrograde pyelogram (fig. 6) on the previously injured kidney did not reveal atrophy other than a shallow indentation at the site of the rupture. The pyelogram was normal except for accidental pyelotubular backflow. *The final diagnosis was communicating rupture with perirenal hematoma.*

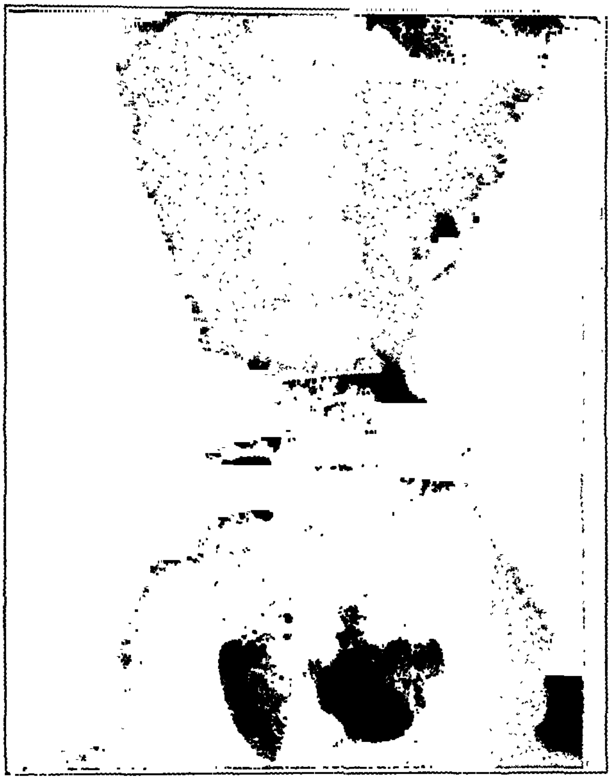

Fig. 7 (case 5).—Excretory urogram showing complete absence of function from right kidney and obliteration of renal and psoas muscle outlines.

An earlier exploratory operation on this patient probably would have necessitated nephrectomy because of active hemorrhage from the ruptured area. Nonoperative treatment would have exposed the girl to possible late sequelae.

Case 5.—C. P., a Negro aged 42, was admitted to the hospital Sept. 28, 1948, approximately twenty-four hours after having been struck over his back by a chair while fighting. He had immediately experienced pain in his right flank and had subsequently noticed that his urine was bloody. On physical examination the patient was lying with his right leg flexed and was apparently in severe pain. The right flank was rigid and exquisitely tender, and there was a suggestion of an underlying mass. The urine was grossly bloody. A flat plate roentgenogram of the abdomen showed the right psoas muscle shadow and the lower half of the right renal shadow to be completely obliterated. An excretory urogram (fig. 7) showed that there was no function of the right kidney. The patient was given a cystoscopic examination forty-eight hours after admission, or seventy-two hours after his injury, and blood was seen to slowly ooze from the right urethral orifice. A right retrograde pyelogram (fig. 8) showed extravasation of the dye from the middle calices; the superior and inferior calices and pelvis were well outlined, but they appeared to be filled by a blood clot forming a cast of the pelvis. An exploratory operation on the right kidney was performed immediately, with a preoperative diagnosis of complete rupture in the middle third. The lumbodorsal fascia was dark bluish black and tense. The renal fossa was filled wtih approximately 200 cc. of old blood clots and macerated fatty tissue. There was a ragged deep laceration on the anterior and posterior surfaces of the middle third of the kidney extending down to the hilus anteriorly (fig. 9). On delivery of the kidney numerous areas of ischemic infarction were discovered. A nephrectomy was performed, from which the patient made an uneventful recovery. The final diagnosis was severe communicating rupture of the kidney with multiple ischemic infarctions and perirenal hematoma.

Earlier operation on this patient would have been technically much more difficult and dangerous because of active hemorrhage.

Case 6.—E. S., a deaf-mute student aged 18, was admitted to the hospital Nov. 17, 1947, three days after a football injury. Subsequently a dull aching pain in the flank had developed, and he had noted that his urine was bloody. Examination revealed only slight tenderness in the flank and no palpable mass. A flat plate roentgenogram disclosed poorly defined right renal and psoas muscle shadows. Excretory urograms showed poor function on the right (fig. 10). A right retrograde pyelogram showed extravasation of the dye about 1 cm. into the parenchyma from the inferior minor calyx (fig. 11). We believed that the kidney should be examined at an exploratory operation according to our postulates; however, because the flank tenderness was minimal and the urine had become clear we did not operate but discharged the patient on the sixth hospital day. He was readmitted on two occasions because of gross hematuria and colicky pain, and finally an exploratory operation was performed one month after the injury. The kidney was densely adherent over the lower pole to the surrounding tissues and was only partially mobilized with the greatest of difficulty. A lower pole nephrostomy was attempted but found

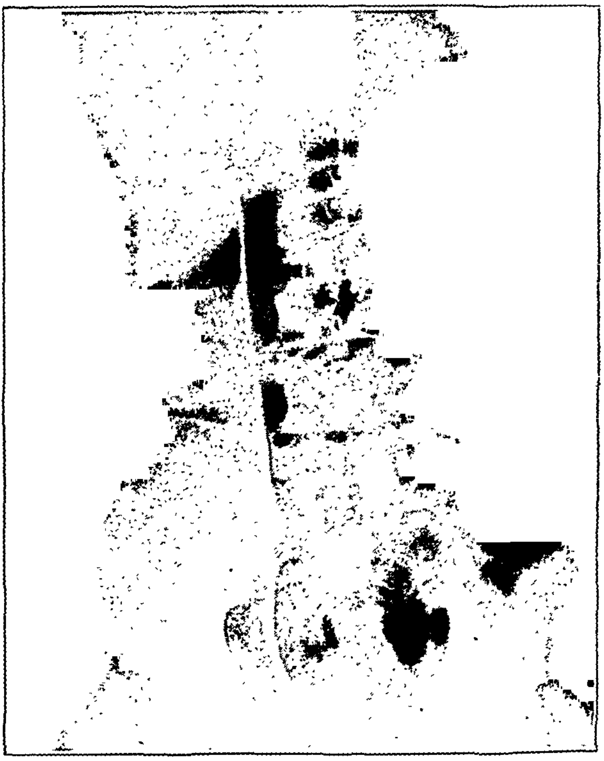

Fig. 8 (case 5).—Retrograde pyelogram showing extravasation of dye from the middle calyx, shadowy pyelogram indicative of blood-clot cast filling pelvis and obliteration of renal and psoas muscle outlines.

to be technically impossible because of the adherence of the lower pole and pelvis to the surrounding tissues. Rather than leave the kidney and subject the patient to further bleeding, a nephrectomy was performed. The kidney (fig. 12) was normal except for the perirenal scar tissue over the lower pole and pelvis and a small area of granulation tissue in the inferior minor calyx, the point at which the rupture had been demonstrated on the initial retrograde pyelogram. The final diagnosis was pyeloparenchymal rupture of the kidney with repeated secondary hemorrhage.

In this case, if we had followed our own postulates an exploratory operation would have been performed and the kidney would have been salvaged by nephrostomy drainage at the seventy-two hour period. However, by our own wishful thinking that we could treat it is a nonoperative, group 1 case we were forced to perform a nephrectomy at a late date. In reply to those who would say that the recurrent hemorrhages were due to infection carried to the ruptured area by retrograde pyelography, we should like to add that urine cultures were sterile on all admissions.

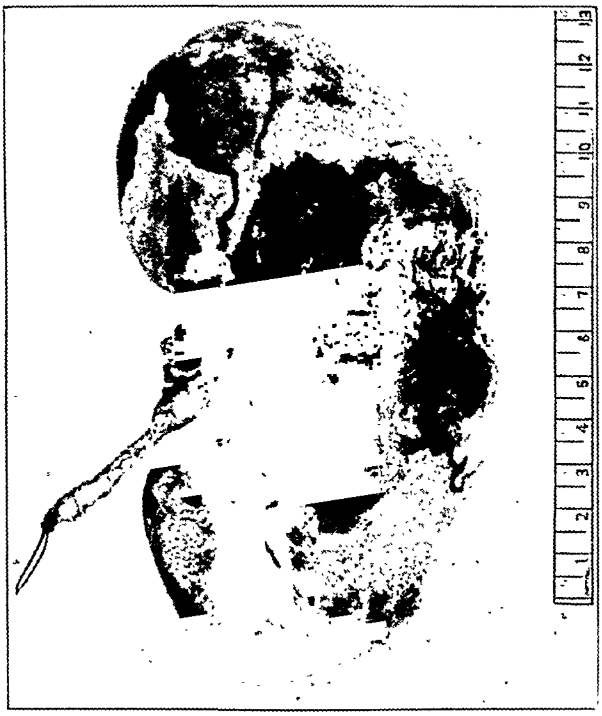

Fig. 9 (case 5).—Kidney removed at operation seventy-two hours after the injury, showing areas of rupture and ischemic infarction.

Patients in group 3 require immediate operative intervention as a life-saving measure as soon as shock treatment has been instituted. An excretory urogram may be obtained during this interval as supportive evidence and to evaluate the opposite kidney.

CASE 7.—J. F., a log turner aged 39, was admitted to the hospital two hours after a crushing blow to his right flank by a sawmill log-carriage. On admission the patient was in moderate shock; his bladder was distended above the umbilicus, and he was able to pass only a few blood clots via his urethra. A flat plate roentgenogram of the abdomen showed partial obliteration of the psoas muscle and renal shadows on the right side, and intravenous urography disclosed no function on the right. Attempts to evacuate the clots from the bladder by catheter revealed that the blood was coming into the bladder, probably from the ureter, as fast as it could be aspirated. Although the patient was immediately given plasma and then whole blood, he continued to progress deeper into shock. Four hours after the injury he was taken to the operating room, where a right nephrectomy was performed. There was an almost complete rupture of the kidney at the junction of the lower and upper thirds (fig. 13). The renal vein was ruptured and apparently communicated with the pelvis; this explained

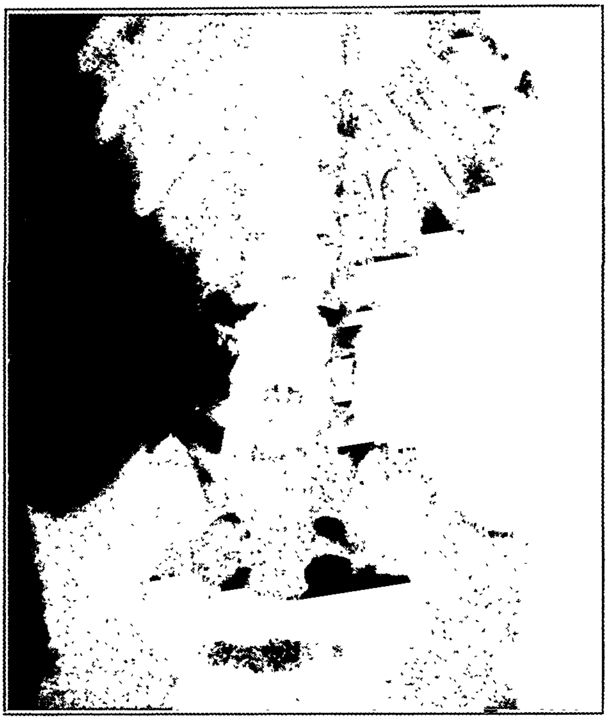

Fig. 10 (case 6).—Excretory urogram showing poor function from right kidney. The right renal and psoas muscle shadows are poorly defined.

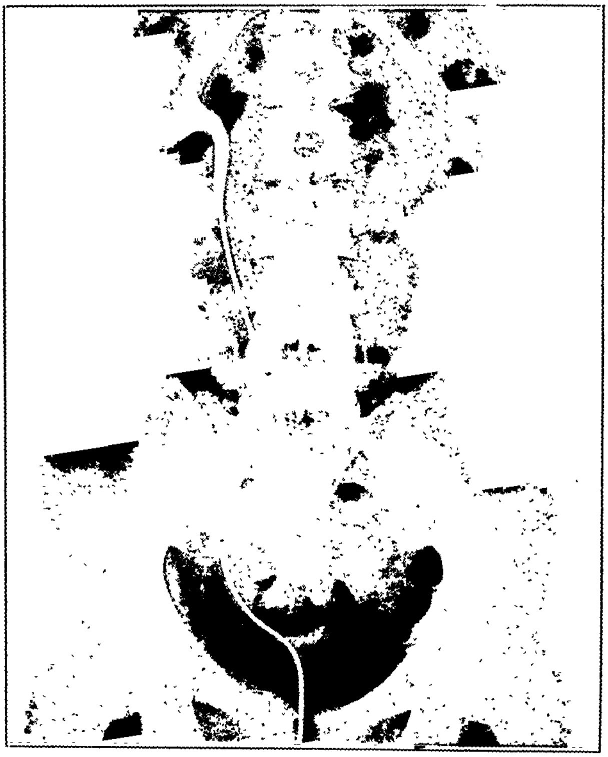

Fig. 11 (case 6).—Retrograde pyelogram showing extravasation of dye from most inferior calyx. The renal and psoas margins are poorly defined.

the severe bleeding down the ureter into the bladder. After removal of the kidney, the patient responded to whole blood therapy and quickly recovered from his shock. The final diagnosis was rupture of the kidney and vascular pedicle.

We believe that this patient would have bled to death if he had not been brought immediately to the hospital. Nephrectomy was a life-saving measure, as he was bleeding profusely from a tear in one of the major pedicle vessels.

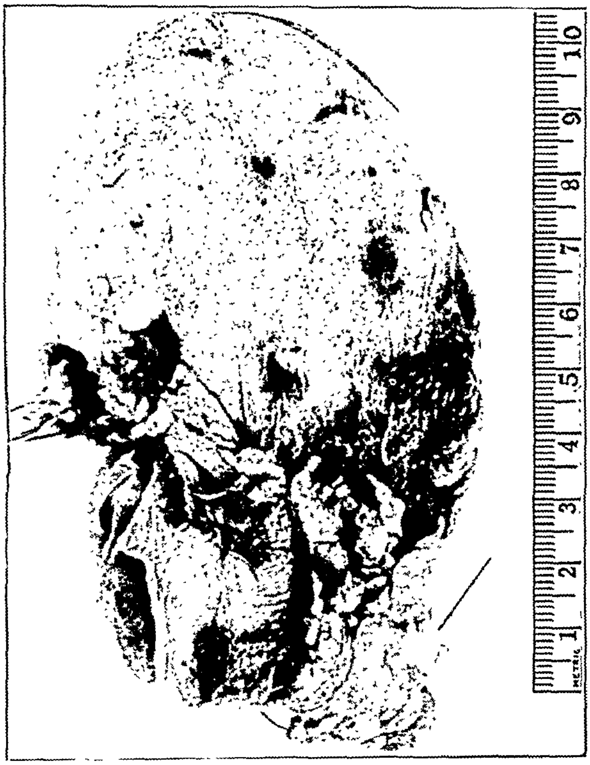

Fig. 12 (case 6).—Kidney removed at operation one month after injury, showing adherence of perinephric tissue over area of rupture demonstrated on the retrograde pyelogram.

COMMENT

Of the series of 12 cases managed according to our system of grouping, three cases were classified as group 1, 8 cases as group 2 and 1 case as group 3; in 9 cases, therefore, exploratory operations were performed. An emergency nephrectomy was mandatory according to our classification of the patient in group 3. In the series of 8 cases in group 2, 2 nephrectomies were necessary; in 3 cases of frank rupture the kidneys were salvaged by evacuation of clots and nephrostomy drainage; in 2 cases the kidneys were drained exteriorly for perirenal hemorrhage without demonstrable rupture; in 1 case the kidney was found to be grossly uninjured (this case was complicated by a fracture of the transverse process of the third lumbar vertebra on the side of the renal injury; intestinal gas prevented roentgenograms of diagnostic quality).

A comparison of this series of cases with that reported prior to our present methods of management[1] shows an increase from 30 to 70 per cent in the number of cases with exploratory operation. This is due to the fact that we formerly operated on few patients in group 2. The mortality is zero in our present series as compared to 13 per cent in our former series. We believe that this is due not only to our present method of management but also to the use of antibiotics and whole blood and to the absence of serious associated injuries in this series.

We are aware of the various contradictory modes of management of the injured kidney. Many have considered the so-called conservative nonoperative treatment preferable in the majority of cases. Sargent[5] has modified this, stating that operative intervention is not indicated in cases in which the retrograde pyelogram shows the renal pelvis to be "essentially intact." Lowsley[3] expressed the opinion that in any case in which bleeding continues more than twenty-four hours there should be an exploratory operation; he has advocated suture of the ruptured area with ribbon gut over fat. We employed a similar method in 1 case in our previously reported series with excellent results.[1] However, in subsequent cases a nephrostomy tube has been our method of choice because of the reasons previously enumerated. In an unpublished series of experiments on dogs with injured kidneys Lowsley[6] found that without drainage the kidneys, "because contracted to a remarkable degree, rendered the dogs quite ill, and in some cases a rise in the blood pressure occurred." But when the kidney was drained this did not happen and the "damage to the kidney over a period was minimal." Colston and Baker[2] have stated that "trauma to the kidney should not be neglected. When there is doubt as to the presence of extravasation of blood or urine, prompt operation and evacuation of the clots about the kidney should be carried out, as our series of cases clearly shows that if the extravasation be allowed to remain untreated, a calcified cyst may result." Pelouze[7] has stated that "where a palliative course has been

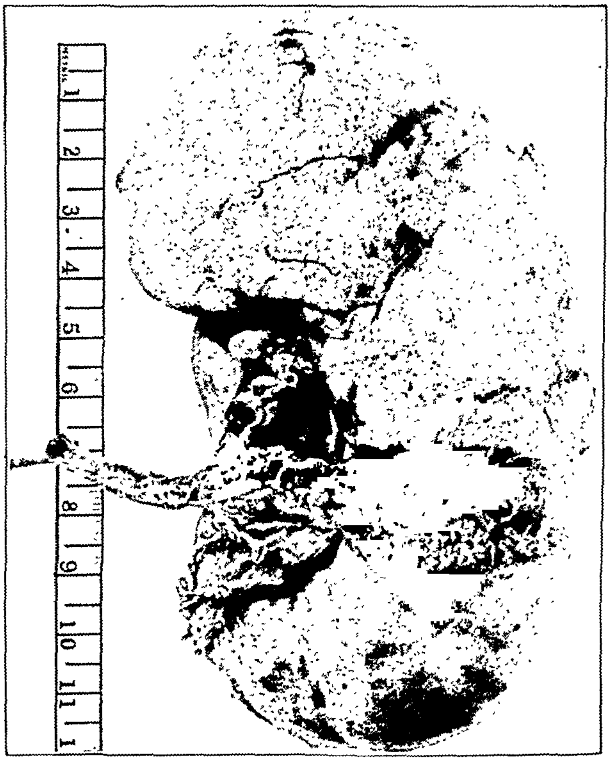

Fig. 13 (case 7).—Kidney removed at emergency operation four hours after the injury, showing area of rupture. The tear in the renal vein is not clearly demonstrated in the photograph.

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[5] Sargent, J. C.: Injuries of the Kidney, J. Urol. 53:381, 1945.

[6] Lowsley, O. S.: Personal communication to the authors, March 25, 1948.

[7] Pelouze, P. S.: Office Urology, Philadelphia, W. B. Saunders Company, 1942, p. 517.

pursued with seeming success, it is well to make a study of the comparative functional values of the two kidneys a year or so after recovery, for later complete cessation of function of the injured kidney is not altogether rare." Other authors have also warned of the deleterious sequelae to injury of the kidney, such as delayed bleeding, perirenal suppuration, hydronephrosis, pyonephrosis, stone formation and atrophy.[8]

SUMMARY

A classification of renal injuries into three groups is presented. The management of each of the groups is described and representative cases reported. Patients in group 1 should be treated nonoperatively. Patients in group 2 should have exploratory operations approximately seventy-two hours after the injury, and the kidney should be salvaged if possible; a splinting nephrostomy tube is recommended. Patients in group 3 require immediate emergency nephrectomy as a lifesaving measure.

A series of 12 patients treated at the Charlotte Memorial Hospital according to this system of management is analyzed.

Controversial modes of management of the injured kidney are briefly noted.

Medical Arts Building (Drs. McKay and Baird).

Charlotte Memorial Hospital (Dr. Lynch).

PULMONARY ARTERIOVENOUS FISTULA (VARIX)

Review of the Literature and Report of Two Cases

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In recent years there has developed an increasing awareness of the occurrence of pulmonary arteriovenous fistulas of congenital and often familial origin, and one now finds reports in the medical literature of lesions recognized clinically and treated surgically. Such lesions are also called angioma, cavernous hemangioma and arteriovenous varix or aneurysm. They are probably not related to malignant hemangioma of the lung, which is rare and causes widespread metastases. It appears to be probable that all benign, congenital pulmonary angiomas are of the same general nature as those observed in cases of Rendu-Osler-Weber's disease, or hereditary hemorrhagic telangiectasia, perhaps better called heredofamilial angiomatosis. Some cases merely lack the lesions of the skin and mucous membranes. The familial incidence may not be traceable in the individual case because of atavism. The hereditary nature of the disease has been discussed recently by Moyer and Ackerman.[1]

Pulmonary arteriovenous fistulas were described at necropsy by Churton[2] in 1897, Wilkens[3] in 1917, de Lange and de Vries Robles[4] in 1923, Reading[5] in 1932 and Rodes[6] in 1938. Apparently Smith and Horton[7] in 1939 made the first clinical diagnosis, and Hepburn and Dauphinee[8] in 1942 performed the first pneumonectomy for this condition. We have found reports in the literature of 41 cases, with surgical treatment employed in 23. To these we are adding 2, with surgical treatment in 1. We know of several other cases which have not been reported. Two such cases of Dr. Brian Blades are included in the tabular data of this review.

These pulmonary arteriovenous fistulas are composed of a distended, thin-walled afferent artery, distended efferent veins and an intervening loculated vascular sac or labyrinth of distended vessels. All these vascular components gradually become more dilated, and degenerative changes may occur, causing more intercommunications to form and occasionally leading to rupture with hemorrhage into the pulmonary parenchyma or pleural sac. Multiple lesions occur in more than half of the cases. The cavities are usually lined by mesothelial cells on a thin layer of connective tissue. The pathogenesis is probably "a gross deviation of capillary formation."[1] The small cutaneous and mucocutaneous telangiectases or angiomas "are characterized by disseminated abnormalities of capillaries, small venules and small arterioles. . . . They vary from typical spider nevi to pea-size hemangiomata."[1] They may involve any organ. The vessels may rupture easily. Bean[9] has differentiated between acquired spider nevi and the angiomatous lesions of hereditary hemorrhagic telangiectasia. Some patients are photosensitive, and exposure to sun rays causes hemorrhage of cutaneous lesions; however, in some cases the hemorrhagic tendency is absent.

TABLE 1.—*Pulmonary Arteriovenous Fistula Symptoms in 45 Cases*

			Not Stated
Age Diagnosed	Youngest 2 Days	Oldest 56 Yr.	1
	Average 28 Yr.		
Sex	Male 31	Female 12	2
Color	White 43	Negro 2	
Family history	Positive 12	Negative 8	25
Age of onset of symptoms	At birth 9	Childhood 11	
	Over 12 yr. 18		7
Symptoms	Present	Absent	Not Stated
Cyanosis	33	3	9
Clubbing of fingers	31	3	11
Bruit (extracardiac)	26	3	16
Dyspnea	23	2	20
Epistaxis	14	2	29
Weakness	13	3	29
Cardiac abnormalities	9	24	12
Convulsions	9	4	32
Hemoptysis	8	2	35
Chest pain	8	3	34
Unconsciousness	8	3	34
Dizziness	7	4	34
Cerebrovascular accidents	4	..	41
Numbness	5	..	40
Splenomegaly	3	4	38
Vomiting	3	4	38
Faintness	3	3	39

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8. Lynch.[1] Colston and Baker.[2] Lowsley and Menning.[3]

From the Yater Clinic and the private practice of one of us (J.F.).

[1] Moyer, J. H., and Ackerman, A. J.: Hereditary Hemorrhagic Telangiectases Associated with Pulmonary Arteriovenous Fistula in Two Members of a Family, Ann. Int. Med. **29:** 775, 1948.

[2] Churton: Multiple Aneurysm of Pulmonary Artery, Brit. M. J. **1:** 1223, 1897.

[3] Wilkens, G. D.: Ein Fall von multiplen Pulmonalis Aneurysmen, Beitr. z. Klin. d. Tuberk. **38:** 1, 1917.

[4] de Lange, C., and de Vries Robles, S. B.: Ueber Lungenangioma bei einem Saugling, Ztschr. f. Kinderk. **34:** 304, 1922-1923.

[5] Reading, B.: A Case of Congenital Telangiectasis of the Lung Complicated by Brain Abscess, Texas State J. Med. **23:** 462, 1932.

[6] Rodes, C. B.: Cavernous Hemangiomas of the Lung with Secondary Polycytaemia, J. A. M. A. **110:** 1914 (June 4) 1938.

[7] Smith, H. L., and Horton, B. T.: Arteriovenous Fistula of the Lung Associated with Polycythemia Vera: Report of a Case in Which the Diagnosis Was Made Clinically, Am. Heart J. **18:** 589, 1939.

[8] Hepburn, J., and Dauphinee, J. A.: Successful Removal of Hemangioma of the Lung Followed by the Disappearance of Polycythemia, Am. J. M. Sc. **204:** 681, 1942.

[9] Bean, W. B.: The Cutaneous Spider: A Survey, Medicine **24:** 243, 1945.

Rendu[10] in 1896 was the first to report a case of hereditary hemorrhagic telangiectasia, and Osler[11] in 1901 reported 3 cases of the disease associated with epistaxis. Later Weber[12] reported other cases and familial groups and elaborated on the disease. None of these authors described pulmonary lesions. Since then more than 1,000 cases have been reported with lesions involving practically any area in the body.[1]

The circulatory fault resulting from pulmonary arteriovenous fistula is dependent on the amount of unoxygenated blood passing through the fistula. The cardinal symptoms are due to the chronic anoxemia produced by the incomplete aeration of blood in the lungs, and the presence and degree of symptoms therefore depends on the size and duration of the shunt. With large fistulas the bone marrow is stimulated to form more erythrocytes. The blood volume is thereby increased, most of the increment being red blood cells. Consequently both the hemoglobin and red blood cell count are increased as well as the hematocrit. Cyanosis and clubbing of the digits are other results. Occasionally hypertrophic pulmonary osteoarthropathy is noted. Other manifestations are dyspnea on exertion, hemoptysis, weakness, precordial pain, convulsions, unconsciousness, dizziness, diplopia, cerebrovascular accidents, numbness, faintness, palpitation, headache, thick speech and emesis. Many of these symptoms are due to the compensatory polycythemia. Table 1 gives the salient clinical features in the 45 cases.

A murmur is often heard over the lesion. It is usually continuous with systolic accentuation and most intense on deep inspiration, often fading on expiration. Occasionally the murmur is entirely diastolic and increased on inspiration. The heart is usually not enlarged, because the strain on the right ventricle is slight because of low blood pressure in the pulmonary circulation. The cardiac output remains normal. The blood pressure is usually normal. The electrocardiogram is also usually normal, but occasionally there is right or left axis deviation. Nodal tachycardia and premature beats have been noted during operative intervention. The venous pressure is usually within normal limits. The arm-to-lung time and arm-to-tongue time are usually within normal limits. The arterial oxygen saturation is decreased, sometimes to as low as 63 per cent, and decreases still more on exercise (in 1 case to 59 per cent). The vital capacity may be decreased. Biochemical examinations give normal results, but the carbon dioxide-combining power of the blood or alkali reserve may be slightly depressed. The spleen is occasionally enlarged. After operation with removal of the only or main fistula the foregoing alterations promptly disappear, the clubbing of the digits disappearing less rapidly. Table 2 gives the laboratory data in the 45 cases.

The radiologic appearance of the lesion is characteristic. Even in plain roentgenograms the diagnosis may be made, but angiocardiograms are pathognomonic. On the routine roentgenogram a lobulated opacity is seen, with bandlike linear or sinuous opacities connected with the hilus. These are sharply shown in angiocardiograms, the bandlike connecting densities denoting the afferent and efferent pulmonary vessels. Fluoroscopic examination occasionally shows pulsations in the lobulated density and/or the hilus. The Valsalva test (deep inspiration followed by forcible expiration against the closed glottis) may result in some decrease in the size of the shadow, whereas Mueller's test (deep expiration followed by forcible inspiration against the closed glottis) may cause an increase. Roentgenograms are best made during the Valsalva test. The pulsation may be proved by kymographic studies.

The differential diagnosis is not difficult. Polycythemia rubra vera is eliminated by the facts that the patient is usually older, has immature leukocytes and basophilia and lacks the typical pulmonary shadow. Splenomegaly may occur in both conditions but is commoner in polycythemia vera. In rare cases, however, there is a rounded, homogeneous pulmonary shadow, perhaps an infarct, in polycythemia vera, as described by Hirsh,[13] but the lesion is not lobulated and does not have a linear band connected with the hilus. Congenital heart disease is excluded by the absence of cardiac

TABLE 2.—*Main Laboratory Data in 45 Cases of Pulmonary Arteriovenous Fistula*

Roentgenogram Positive Regular 41 Angiography 10 Kymography 2 Planography 2

	Present	Absent	Not Stated
Polycythemia	28	5	12
Oxygen unsaturation (below 90%)	12 (lowest 63%)	....	33
R. B. C. (5,000,000)	Above........28 (highest 11,450,000)	Below.... 4	13
Hgb. (100%, 15 Gm.)	Above........25 (highest 24.9 Gm., 155%)	Below.... 5	15
Hematocrit (50 mm.)	Above........10 (highest 82)	Below.... 3	32
Blood volume	Increased.... 9 (highest 12,900 cc., 161 cc./Kg.)	....	36

TABLE 3.—*Pulmonary Arteriovenous Fistula*

Number and Location of Lesions, Treatment and Outcome in 45 Cases

Number of lesions	Solitary.................18	Multiple.................27	Bilateral.................13		
Location of lesions	Lower lobe..............29	Middle lobe.............14	Upper lobe..............10	Not stated..... 8	
Surgical treatment (total 26)	Lobectomy.............19	Pneumonectomy......... 5	Ligation only........... 1	Excision only.. 1	
Outcome—not operated	Died of the condition.... 6	Died of other conditions 3	Unchanged.............. 2	Not stated..... 8	
operated	Cured....................17	Improved................ 2	Died postoperatively.... 2	Not stated..... 4	Unchanged... 1

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10. Rendu: Epistaxis repetée chez un sujet porteur de petits angiomes cutanés et muqueaux, Bull. et mém. Soc. méd. d. hôp. de Paris **13**: 731, 1896.

11. Osler, W.: A Family Form of Recurring Epistaxis Associated with Multiple Telangiectases of the Skin and Mucous Membranes, Bull. Johns Hopkins Hosp. **11**: 333, 1901.

12. Weber, F. P.: Multiple Hereditary Developmental Angiomata (Telangiectases) of the Skin and Mucous M[illegible] Recurring Hemorrhages, Lancet **2**: 160, 1907; [illegible] So-Called "Telangiecta[illegible]," [illegible] tic Hemorrhages and Hemorrhagic Telangiectasia Familial; Brit. J. Child. *Dis.* **21**: 198, 1924; of the Osler Type—"Telangiectatic Dysplasia," Brit. J. Dermat. **68**: 182, 1936.

13. Hirsh, I. S.: Pulmonary Changes in Polycythemia Vera, Radiology **26**: 469, 1936.

observations of such a lesion in cases of pulmonary arteriovenous fistula and the absence of the typical roentgenographic lesion in congenital heart disease. Infrequently, aneurysm of the pulmonary artery needs to be considered.[14] In some cases there are cyanosis, clubbing and polycythemia; dyspnea, cough and hemoptysis are not uncommon. The roentgenographic shadow of pulmonary aneurysm is connected with the mediastinum and usually pulsates; [illegible] is most important in revealing its na[illegible] genographic lesion of pulmonary varix is apt to be confused with an inflammatory or neoplastic lesion, but roentgenologists are becoming cognizant of the differentiation and are suggesting the proper diagnosis. For internists the diagnosis is most difficult before the appearance of polycythemia and cyanosis.

In the 45 cases listed the diagnosis was finally established clinically in 36, at autopsy in 8 and at operation in 1. Prior diagnoses were polycythemia rubra vera in 7, congenital heart disease in 6, tuberculosis in 5, pneumonia in 3, pulmonary tumor in 2 and 1 each of Hodgkin's disease, intercostal aneurysm, renal disease, arthritis, "laziness" and "hypotension." In 22 cases a prior diagnosis was not reported.

Pulmonary fistula differs in its physiologic effects from peripheral fistula in that with the latter the increased blood volume is the result of a fairly proportional increase in plasma and erythrocytes, the heart may be enlarged, the oxyhemoglobin saturation is normal, the cardiac output is increased and cyanosis and clubbing are not present.

Treatment consists in lobectomy or partial resection for solitary lesions, or even pneumonectomy if there are multiple fistulas in all lobes of one lung (table 3).

Pneumothorax is of no value. Patients with small fistulas that do not produce the alterations of large fistulas may be kept under observation and operated on if such alterations develop. However, pulmonary hemorrhage is an ever present threat and may be fatal. The increased likelihood of thrombosis due to the polycythemia must be kept in mind at the time of operation. If phlebothrombosis occurs in a peripheral vein postoperatively, venous ligation and/or anticoagulant therapy should be used. Phlebotomy with withdrawal of blood and replacement with plasma may be advisable preoperatively.

The prognosis with surgical treatment is good, but the presence of multiple fistulas may cause trouble years later if the smaller fistulas cannot be removed along with the most important lesions. Among the serious complications, besides pulmonary hemorrhage, thrombosis due to polycythemia is important, particularly in the cerebral vessels. Table 4 gives the incidence of cerebrovascular complications in the 45 cases.

REPORT OF CASES

CASE 1 (case 44 in tables 4 and 5).—Mrs. E. R., a white housewife aged 42, had been under the care of one of us (J. F.) for a year and a half. She had had recurrent fleeting attacks of numbness and tingling of the limbs, pain in the left side of the chest without relation to exertion, dyspnea on exertion and cyanosis. Her childhood had been normal, but cyanosis had been noted since she was 10 years of age. The dyspnea had been of recent origin. She had had chickenpox, measles, pertussis, pneumonia (at 10), phlebitis at 25, at childbirth, and an appendectomy and removal of an ovarian cyst at 22 years of age. She had had six pregnancies with four living children. In 1938 she had taken one of her children to a large clinic because of a possible congenital cardiac defect. At that time she, too, had been examined. A systolic humming murmur had been heard low in the interscapular region, louder when she held her breath. A consolidation had been noted in the lower lobe of the right lung. A diagnosis of Eisenmenger's complex had been suggested. An electrocardiogram showed a sinus rhythm with a P-R interval of 0.12 to 0.16 second. In 1940 the patient had had a "stroke" involving the right side of the face and the right arm with some disturbance of speech, all clearing up in three days. In 1945 she had had another "stroke" manifested by aphasia of less than a day's duration. The phlebitis previously noted had occurred with the birth of the son already referred to, who was said to have an interauricular septal defect; since then she had had recurrent pain in the legs, for which venous ligation had recently been performed. On first examination the cyanosis was noted as well as clubbing of the fingers. The second pulmonic sound was accentuated. A roentgenogram of the chest on May 25, 1946 showed a lesion in the lower lobe of the right lung. The hemoglobin level was 114 per cent; the red blood cells numbered 5,760,000 and the white blood cells 6,600 with a normal differential. The urine was normal and reaction to a Wassermann test was negative. On June 26, 1946 a humming murmur was heard medial to the angle of the right scapula. In July 1946 the hemoglobin was 114 per cent (18 Gm.) and the red blood cells numbered 7,400,000 with the cell pack 45 per cent. The total plasma volume was 4,000 cc. and the whole blood volume 7,272 cc., or 114 cc. per kilogram of body weight. Because of the polycythemia phlebotomies were performed. The blood pressure ranged from 110 systolic and 70 diastolic to 135 systolic and 100 diastolic. Again, on Nov. 29, 1947, a continuous humming murmur was noted in the right side of the chest posteriorly below the scapula, accentuated by deep inspiration. At that time the diagnosis of congenital arteriovenous fistula was made (by J. F.). The venous pressure was 8 cm., and the vital capacity was 93 per cent of normal.

TABLE 4.—*Pulmonary Arteriovenous Fistula*

	Cerebral Manifestations in 45 Cases					
Case*	Paralysis or Weakness of Extremities	Numbness or Paresthesia	Dizziness or Vertigo	Unconsciousness	Convulsions	Other
3	....	....	..	..	+	
4	Left arm and leg	....	..	..	..	
6	....	....	..	..	+	
7	....	Hands and feet	+	..	..	Tinnitus; diplopia
8	....	....	+	..	..	
13	....	....	+	+	..	
15	....	Left arm	+	..	+	
18	Left arm and leg	....	..	+	+	
20	....	Left side	+	+	..	
21	....	....	..	+	..	Headaches; blurred vision
22	....	....	..	..	Left side	
23	....	....	+	..	..	Tinnitus
29	Left arm and leg	....	..	+	+	
30	....	....	..	..	+	EEG epileptic curve
37	....	....	+	..	..	Blurred vision; diplopia
40	Left hand	....	..	+	+	Brain abscess
41	Right hemiplegia	....	..	+	Left side	Aphasia
43	....	....	..	+	..	Mental confusion
44	Right side	+	..	..	..	Aphasia
45	....	+	..	..	..	
Total 20	6	5	7	8	9	9

* The cases are numbered as in table 5; cases 44 and 45 are cases 1 and 2, respectively, of this article.

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[14] Deterling, R. A., and Clagett, O. T.: Aneurysm of the Pulmonary Artery: Review of the Literature and Report of a Case, Am. Heart J. 34:471, 1947.

When first examined at the Yater Clinic on Dec. 4, 1947, the patient complained mainly of dyspnea on exertion. She was well developed and nourished. Her blood pressure was 130 systolic and 70 diastolic, her pulse rate was 86. She was moderately cyanotic and had slight clubbing of the fingers. The heart was not enlarged on physical examination, fluoroscopic examination or in roentgenograms. On deep inspiration with the breath held, a long, high-pitched systolic murmur was heard below the right scapula in an area corresponding to the upper half of the lower lobe of the right lung. It was heard down into the lower part of the right axilla and below the right breast. It was continuous, with slight systolic and diastolic accentuation. A roentgenogram disclosed opacities in the right lower lung field (figs. 1 and 2). The lateral view revealed a lesion which in appearance suggested a bunch of grapes. Angiocardiograms made at the Cardiovascular Research Unit of the Veterans Administration Hospital, Washington, D. C., showed a large angiomatous lesion in the lower lobe of the right lung with large vessels entering and leaving it (figs. 3 and 4). An electrocardiogram showed low voltage in the standard leads with normal voltage of the QRS complexes in the precordial leads, indicating that the main electromotive force was directed anteroposteriorly rather than in the plane of the limb leads. Lobectomy was advised and was performed with the patient under thiopental sodium (pentothal®) and ethylene anesthesia with 240 units of d-tubocurarine chloride by one of us (H. M. G.) on Feb. 13, 1948, as follows:

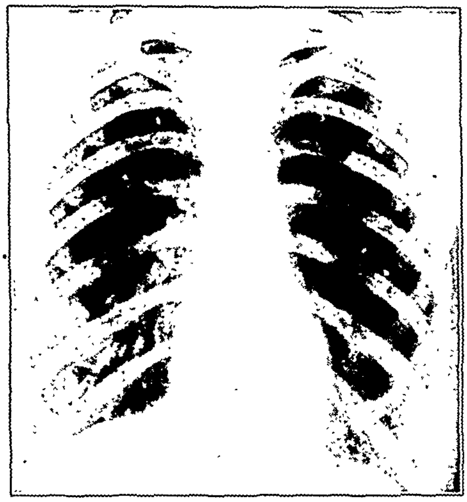

Fig. 1 (case 1).—Roentgenogram showing irregular opacity in lower right lung field.

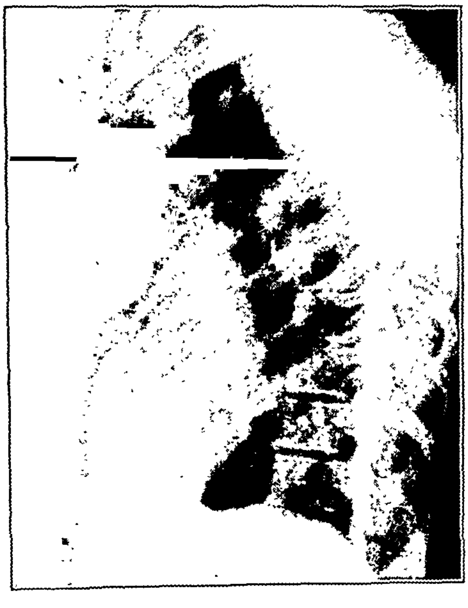

Fig. 2 (case 1).—Roentgenogram showing in lateral view "bunch of grapes" opacity typical of pulmonary varix.

With the patient in the left lateral decubitus the chest was opened through the bed of the seventh rib. When the pleural space was entered, the lower lobe of the right lung was found to be free of all adhesions. On its lateral surface was a circular area approximately 5 by 5 cm. which obviously represented the peripheral portion of the arteriovenous communication. There was a palpable thrill over the entire lower lobe, but it was maximal at this point. Examination of the interlobar fissure revealed an unusually enlarged pulmonary artery with a palpable thrill along its course. It was decided that a right lower lobectomy would be required, the fistula being intimately incorporated within the lobe. The pulmonary ligament was first severed between clamps and ligated. The pleura was then dissected from the hilus posteriorly as well as in the interlobar fissure, and an individual dissection and ligation was done, first tying off the pulmonary artery in the anterior-superior *position and then the pulmonary veins inferiorly.* Both the artery and vein were unusually large, probably because of the presence of the aneurysm, and were extremely friable. However, it was possible to place double ligatures of no. 1 braided black silk followed by a transfixion suture of the same material in each instance. Closure of the lower lobe bronchus just below the origin of that of the middle lobe was accomplished with no. 0 black silk mattress sutures beneath the clamp followed by a running chromic no. 1 surgical gut over-and-over suture. There was no unusual bleeding at any time. The patient's condition was satisfactory throughout the operation. Prior to closure the pleural space was irrigated with warm saline solution, and no leakage of the bronchus was found. A no. 26 catheter was inserted through the ninth interspace in the posterior axillary line with gravity bottle drainage. The chest was closed in the usual manner while simultaneous positive pressure was administered and suction was applied to the intercostal catheter. At the end of the operation the patient's color was good, and the blood pressure was maintained after returning the patient to dorsal decubitus.

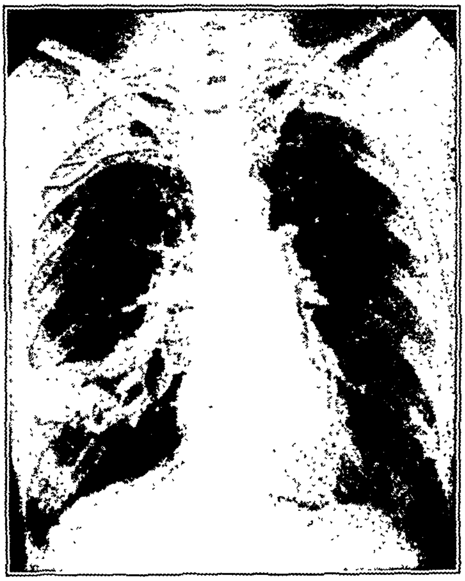

Fig. 3 (case 1).—Angiocardiogram (two seconds), showing typical appearance of pulmonary varix.

Hematologic, circulatory and blood chemical examinations were made before and after operation. The highest preoperative erythrocyte count was 7,400,000 with 114 per cent hemoglobin and a hemotocrit reading of 55 per cent. Two days before operation the erythrocyte count was 4,400,000 with 88 per cent hemoglobin. Three *months after operation the erythrocyte count* was 3,750,000 with 74 per cent hemoglobin and a hematocrit reading of 39 per cent. The highest preoperative blood volume was 7,272 cc. Two days before operation it was 6,843 cc., of which 3,760 cc. was plasma. Eight days after operation the blood volume was 6,409 cc., of which 4,320 cc. was plasma; four months later the blood volume was 6,688 cc., of which 4,080 cc. was plasma. One month before operation the arm-to-tongue circulation time (calcium gluconate) was 8.5 seconds and the arm-to-lung time (ether) 4.2 seconds. These times were essentially the same after operation. The serum calcium determination was 8 mg. per hundred cubic centimeters before and 10.5 mg. after operation. The carbon dioxide–combining power was 65.5 volumes per cent before and 69 volumes after operation. Serum sodium determination was 344 mg. per hundred cubic centimeters before and 374 mg. after operation. Serum potassium was 19 mg. per hundred cubic centimeters before and 15 mg. after operation. Oxygen determinations of venous and arterial blood were made, but because the blood clotted in some specimens these values are not reported.

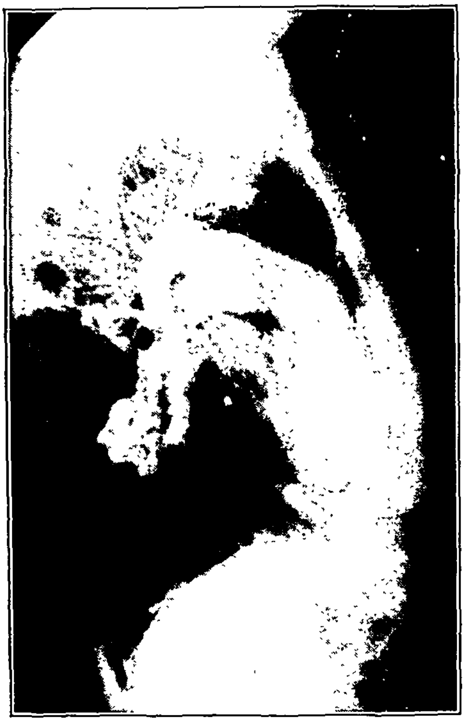
Fig. 4 (case 1).—Angiocardiogram (three seconds), lateral view.

The heart rate ranged from 80 to 96 before operation and between 72 and 76 per minute afterward.

The postoperative course was uneventful. The patient was out of bed and walking after a week. The dyspnea and cyanosis no longer existed. The clubbing of the fingers was not evident after six months. There was no deformity of the chest. Fluoroscopic examination revealed normal conditions except for slight elevation of the right hemidiaphragm.

Examination of the excised lobe revealed a large cluster of exceedingly thin-walled, mesothelium-lined blood vessels of various sizes, the largest more than 2 cm. in diameter (figs. 5 and 6) lying in the parenchyma of the lung just beneath the pleura laterally. Externally this "angioma" felt soft. Several large vessels led to and away from the cluster. The vascular channels of the cluster apparently intercommunicated freely, but they could not be differentiated into arteries and veins.

Case 2 (case 45 in tables 4 and 5).—Mr. C. B., a farmer aged 42, came in for examination Aug. 12, 1948 because of pains in the joints. For three to four years he had been having attacks about once a week of severe pain, swelling, redness and heat in various large joints, usually one at a time, lasting for about twenty-four hours. In the interval he was entirely well. These attacks were preceded by numbness of the hands and arms during the night and were accompanied with stiffness of the adjoining muscles. There had been an occasional mild epistaxis for twelve years, and for six or seven years he had been aware of small "blood blisters" on the lower lip which bled easily. He had worked hard as a farmer without dyspnea, was married and had five healthy children. He was illiterate

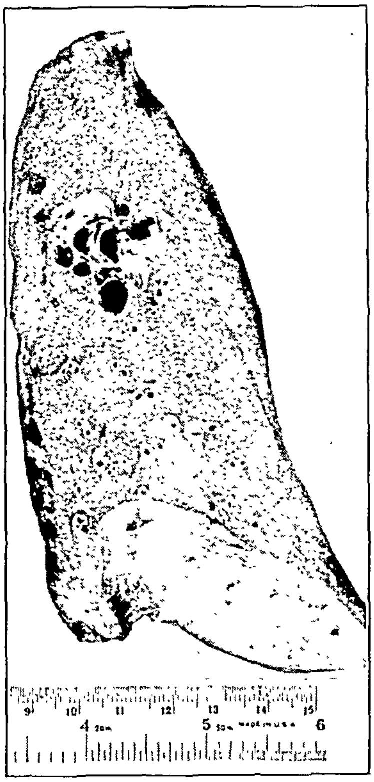

Fig. 5 (case 1).—Gross specimen of removed lower lobe of right lung cut through main part of varix.

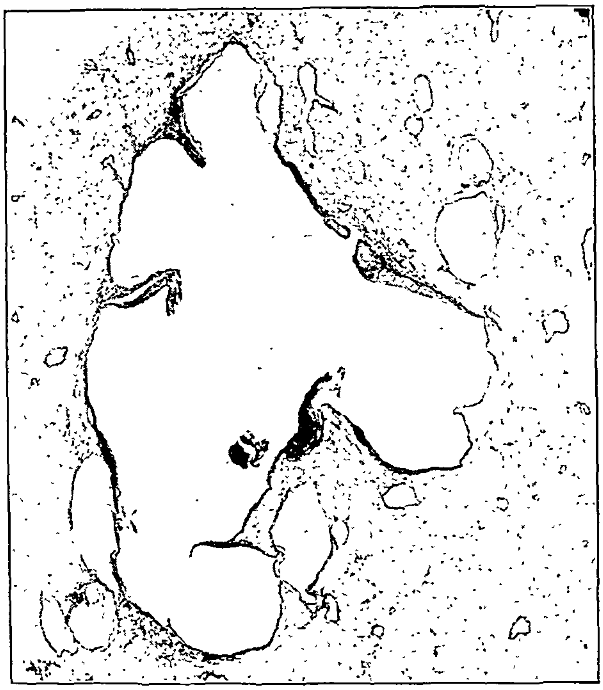
Fig. 6 (case 1).—Section through portion of varix (× 6).

TABLE 5.—*Data in 45 Cases of*

Case	Author	Age	Sex	Family History	Onset of Symptoms	Cyanosis	Clubbing	Dyspnea	Epistaxis	Hemangiomas	Hemoptysis	Weakness	Chest Pain	Convulsions	Unconsciousness
1	Churton,[2] 1897	12	M	..	11 yr.	..	..	..	+	..	+	+	..	..	..
2	Wilkens,[3] 1917	23	F	..	17 yr.	+	+	..	..	..	..	..	..	..	..
3	de Lange and de Vries Robles,[4] 1923	10 wk.	..	..	Infancy	..	..	+	..	..	..	..	..	+	..
4	Reading,[5] 1932	4	F	..	Birth	+	+	..	..	..	..	+	..	..	..
5	Bowers, W. F.: Nebraska M. J. **21**: 55, 1936	2 days	M	..	2d day	..	..	+	..	..	..	..	..	..	..
6	Rodes,[6] 1938	25	M	—	Birth	+	+	..	..	+	..	..	+	+	..
7	*Smith and Horton,*[7] 1939	40	M	—	Birth	+	+	+	..	..	..	..	+	..	..
8	Hepburn and Dauphinee,[8] 1942	23	F	..	15 yr.	+	+	+	..	..	..	..	..	..	..
9	Goldman, A.: Dis. of Chest. **9**: 479, 1943	22	M	—	Infancy	+	+	+	..	+	..	..	+	..	..
10	Adams, W. E.; Thornton, T. F., Jr., and Eichelberger, L.: Arch. Surg. **49**: 51, 1944	24	M	+	6 yr.	+	+	..	+	+	..	..	..	..	..
11	Janes, R. M.: Brit. J. Surg. **31**: 270, 1943-1944	30	M	..	....	+	..	..	..	+	+	..	..	..	..
12	*Jones and Thompson,* W. P.: J. Thoracic Surg. **13**: 357, 1944	24	F	..	Birth	+	+	..	..	..	..	..	..	..	..
13	Alexander, W. S.: New Zealand M. J. **44**: 180, 1945	41	M	..	For years	+	+	+	.	..	..	..	+	..	+
14	Rundles, R. W.: Am. J. M. Sc. **210**: 76, 1945	56	M	..	14 yr.	..	..	+	+	+	..	+	+	..	..
15	Sisson, J. H.; Murphy, G. E., and Newman, E. V.: Bull. Johns Hopkins Hosp. **76**: 93, 1945	45	F	—	22 yr.	+	+	+	..	..	+	..	..	+	..
16	Makler, P. T., and Zion, D.: Am. J. M. Sc. **211**: 261, 1946	21	M	—	14 yr.	+	+	+	+	+	..	..	..	..	..
17	Lindgren, E.: Acta radiol. **27**: 585, 1946	30	M	..	14 yr.	+	+	+	..	..	..	+	..	..	..
18	Lindgren, E.: Acta radiol **27**: 585, 1946	29	M	+	Childhood	+	+	+	..	+	+	+	..	+	+
19	Lindgren, E.: Acta radiol. **27**: 585, 1946	25	F	..	....	+	+	+	..	..	+	+	..	..	..
20	Beierwaltes, W. H., and Byron, F. X.: J. A. M. A. **134**: 1069, 1947	27	F	+	Birth	+	+	+	+	+	..	..	..	..	+
21	Bisgard, J. D.: Ann. Surg. **126**: 965, 1947	29	M	..	21 yr.	+	+	+	..	+	..	+	+	..	+
22	Boerema, I., and Brilman, R. P.: Nederl. tijdschr. v. geneesk. **91**: 2736, 1947	10	M	..	Birth	+	+	+	..	..	+	..	..	+	..
23	Burchell, H. B., and Clagett, O. T.: Am. Heart J. **34**: 151, 1947	20	M	..	8 yr.	+	+	..	..	..	..	..	..	..	..
24	Goldman, A: J. Lab. & Clin. Med. **32**: 330, 1947	32	M	..	....	+	+	..	..	..	..	..	..	..	..
25	Mallory, T. B.; Castleman, B., and Parris, E. E.: New England J. Med. **236**: 951, 1947	23	F	..	Childhood	+	+	..	..	..	..	+	+	..	..
26	Sweet, R. H., in discussion on Mallory, Castleman and Parris; personal communication to author	2	M	..	Birth	+	+	..	..	..	..	..	..	..	..
27	Salvesen, H. A.; Tidsskr. f. Den Norske Laegefor. **67**: 460, 1947	25	F	..	Childhood	+	+	—	..	..	..	..	..	..	..
28	Watson, W. L.: Surgery **22**: 919, 1947	27	M	..	25 yr.	..	..	..	..	..	..	..	..	..	..
29	Watson, W. L.: Surgery **22**: 919, 1947	21	M	+	19 yr.	+	..	+	..	+	..	..	..	+	+
30	Williams, C. F., and Flink, E. B.: J. Lab. & Clin. Med. **32**: 1401, 1947	33	M	+	30 yr.	..	..	..	+	+	..	..	..	+	..
31	Whitaker, W.: Thorax **2**: 58, 1947	44	F	+	Birth	+	+	+	+	+	..	..	..	..	..
32	Whitaker, W.: Thorax **2**: 58, 1947	33	M	..	....	—	—	..	+	+	..	..	..	..	..
33	Cleland, W. P.: Thorax **3**: 48, 1948	..	..	..	....	+	+	+	..	+	+	..	..	..	..
34	Maier, H. C.; *Himmelstein,* A.; Riley, R. L., and Bunin, J. J.: J. Thoracic Surg. **17**: 13, 1948	20	F	..	Birth	+	+	+	..	..	..	+	..	..	..
35	Swanson, P. C.: discussion on Maier, Himmelstein, Riley and Bunin	25	M	..	....	..	—	..	..	..	..	..	..	..	..
36	Moyer, J. H., *and* Ackerman, A. J.,[1] 1948	..	M	+	7 yr. before	..	..	..	+	+	..	..	..	..	..
37	Moyer, J. H., and Ackerman, A. J.,[1] 1948	26	M	+	21 yr.	+	+	..	+	+	..	+	..	..	..
38	Moyer, J. H., and Ackerman, A. J.,[1] 1948	28	M	+	23 yr.	+	..	..	+	+	..	+	..	..	..
39	Wodehouse, G. E.; Himmelstein, A.; Riley, R. L., and Bunin, J. J.: J. Thoracic Surg. **17**: 408, 1948	21	M	..	....	..	..	..	..	..	..	..	..	..	..
40	Wodehouse, G. E.; *Himmelstein,* A.: Riley, R. L., and Bunin, J. J.: J. Thoracic Surg. **17**: 408, 1948	13	M	..	5 yr.	+	+	+	..	..	..	+	..	+	+
41	Baer, S.; Behrend, A., and Goldburgh, H. L.: Am. Heart J., to be published	21	M	+	13 yr.	+	—	..	—	..	+	..	..	+	+
42	Blades, B.: Personal communication to the authors	20	M	—	None	—	—	—	—	—	—	—	—	—	—
43	Blades, B.: Personal communication to the authors	22	M	+	21 yr.	+	—	—	—	—	—	+	—	—	+
44	Yater, Finnegan and Giffin, 1949	42	F	—	10 yr.	+	—	—	—	—	—	—	+	—	—
45	Yater, Finnegan and Giffin, 1949	42	M	+	30 yr.	—	—	—	—	—	—	—	—	—	—

Pulmonary Arteriovenous Fistula

Dizziness	Cerebrovascular Accidents	Numbness	Faintness	Bruit	Splenic Enlargement	Hemoglobin		Erythrocytes, Millions	Hematocrit	Arterial Oxygen Saturation, %	Blood Volume, Cc.	Location and Number of Lesions	Treatment	Course
						%	Gm.							
..	..	..	.	+	..	...	....	....	..	....	.....	Bilat. 7	0	Autopsy
..	..	..	..	+	..	...	....	....	..	....	.....	Mult. R.M., R.L., L.L.	0	Death by hemothorax
..	..	..	..	..	..	...	....	....	..	....	.....	Mult. R.U. 3, L.U. 2	0	Death
..	..	..	..	+	..	102	....	6.70	..	....	.....	Mult. L. lung	0	Death by brain abscess
..	..	..	..	..	..	...	....	....	..	....	.....	Mult. R.L. & L.L.	0	Death by hemothorax
..	..	..	..	..	..	118	....	7.54	..	....	.....	R.M., R.L., L.U. 3	0	Death by hemoptysis
+	..	+	..	+	..	...	23.7	6.47	71	....	6,068; 121/Kg.	R.L.L.	0	
+	..	..	+	—	..	146	22.8	9.60	80	73.0	8,500	R.M., R.L.	Pneumonectomy	Cured
..	..	..		..	+	137	....	11.45	..	70.0	8,170	L. midlung	Pneumonectomy	
..	..	..	..	—	..	...	23.0	7.20	..	71.0	.....	L.L.L. 1, L.U. 2	Pneumonectomy	Cured
..	..	..	..	+	..	...	....	....	..	....	.....	R.M., R.L., L.L.4	Local excision	Improved
..	..	..	..	+	..	130	....	7.50	..	....	.....	Mult. R. lung	Pneumonectomy	Cured
+	..	..	..	+	..	...	20.4	8.50	..	....	.....	Mult. bilat.	0	Death by coronary
..	..	..	..	+	+	26	....	3.10	..	....	.....	R.M.L. 1	Transf. only	
+	..	+	..	+	..	...	14.5	5.87	..	....	.....	Mult. L.L., R.M.	0	Death by iodine reaction ("diodrast")?
..	..	..	..	..	..	...	19.5	7.70	55	....	.....	Mult. R. 3, L. 1	0	
..	..	..	..	+	..	55	....	4.30	..	89.9	.....	L.L.L. 1	0	
..	+	..	..	..	..	125	....	6.40	..	....	.....	Mult. R. 1, L. 2	Lobectomy	
..	..	..	..	+	..	...	....	....	..	83.8	.....	Lingula	Lingulectomy	Cured
+	.	+	+	—	—	138	21.6	8.20	75	77.0	.....	R.L.L. 1	Lobectomy	Improved
..	..	..	..	+	..	...	18.0	6.80	71	....	.....	R.L.L. 2	Lobectomy	Cured
..	..	..	..	+	..	...	....	6.00	..	....	.....	R.M L. mult.	Lobectomy	Cured
+	..	..	..	+	+	...	24.1	7.59	82	74.0	172/Kg.	R.M.L. mult.	Lobectomy	Cured
..	..	..	..	..	..	...	....	7.00	..	....	.....	L. lung 1	0	
.	..	..	..	..	—	...	24.9	8.79	69.7	89.2	.....	R.M.L. mult.	Lobectomy	Cured
..	..	..	..	+	..	...	....	....	..	....	.....	R.M.L.	Lobectomy	Cured
..	..	..	..	+	..	153	....	6.50	..	....	.....	R.U.L.	0	
..	..	..	..	..	..	...	....	....	..	....	.....	R.L.L. mult.	Ligation	Unchanged
..	+	..	..	..	..	...	17.0	6.50	58	....	3,800/sq. M.	R.L.L. 1	Lobectomy	Cured
..	..	..	..	+	..	...	....	....	..	....	.....	L.U.L.	....	
..	..	..	..	..	..	96	....	6.30	..	....	.....	R.L.L. 1	Lobectomy	Death 6 mo. after operation
..	..	..	..	+	..	...	....	....	..	....	.....	R.L.L. 1	0	
..	..	..	..	+	..	Increased		....	..	....	.....	Bilat.	Lobectomy	Death in 20 hr.
..	..	.	..	+	..	...	22.0	6.90	70	74.0	4,800	R.L.L.	Lobectomy	Cured
..	..	..	..	..	..	115	18.0	5.81	..	....	.....	R.M.L. 1	Lobectomy	
..	..	..	..	..	..	...	15.5	4.80	44	....	.....	L. lung	0	
+	..	.	..	+	..	125	22.8	8.90	60	63.0	12 900; 161/Kg.	R.L.L. 4 R.M.L. 1, R.U.L. 2	Pneumonectomy	
..	..	..	..	..	..	...	....	....	..	....	Increased	L.L.L. 2	Lobectomy	Cured
..	..	..	..	..	..	107	....	5.10	..	....	....	R.L.L. 1	Lobectomy	Cured
..	..	..	..	..	..	117	....	6.40	..	....	.....	R.L.L. 1	0	Death of brain abscess
..	+	..	..	+	..	...	19.0	8.00	..	....	.....	Mult. R.L., L.L., L.L.	3 lobectomies	Cured
—	—	—	—	—	—	90	....	4.50	..	94.0	.....	L.L. 1, R.L. 1	Lobectomy and segmental resection	Cured
—	—	—	+	+	—	102	16.0	5.50	..	88.5	.....	L.L.L., lingula, R.M.L.	Lobectomy; partial lingulectomy; partial resection R.M.L.	Cured
—	+	+	—	+	..	114	18.0	7.40	45	....	7,272	R.L.L.	Lobectomy	Cured
—	—	+	—	+	..	87	13.0	4.47	47	...	.....	R.M.L. mult.	0	

and not particularly intelligent. His father had had, and a brother had small red "spots" on the lips. The cause of the former's death is not known; the latter was still alive and well.

The patient was well developed and nourished. His skin was typical of "farmer's skin," with pigmentation over exposed areas. Many teeth were carious, and there was severe pyorrhea. The lower lip was the site of many small (1 mm. or less) light red angiomas, and there were a few on the upper lip. The nasal mucous membrane was studded with similar lesions, as were the tongue, gums and buccal mucosa. There were a few pinpoint angiomas on the skin of the fingers and beneath some of the fingernails. The fingers were moderately clubbed, without cyanosis. The blood pressure was 135 systolic and 80 diastolic in the right arm and 124 systolic and 78 diastolic in the left. The heart was of normal size with mild sinus arrhythmia and a rate of 72 per minute. There was a faint systolic murmur at the apex. The most striking observation was a continuous blowing, moderately loud murmur with systolic accentuation in the fourth and fifth right intercostal spaces from the right sternal margin to the posterior axillary line, the area corresponding to that of the middle lobe of the right lung. It was loudest in the fourth interspace at the anterior axillary line, and its intensity was increased with inspiration, during which the diastolic component was more pronounced.

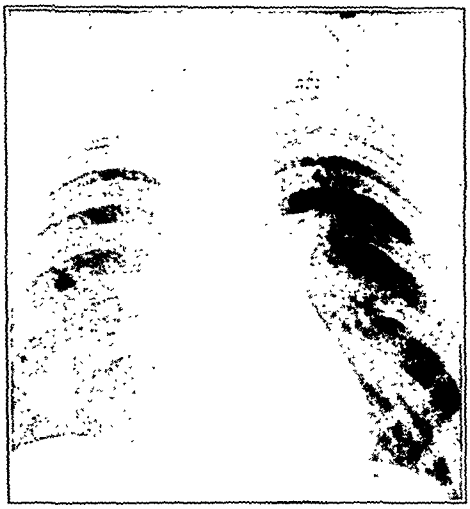

Fig. 7 (case 2).—Roentgenogram showing lobulated shadow in right lower lung field.

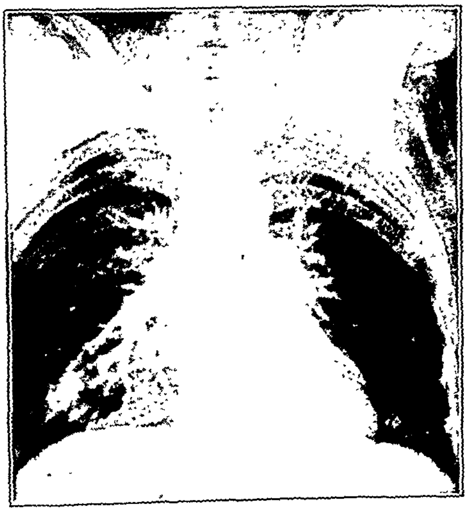

Fig. 8 (case 2).—Angiocardiogram (two and one-half seconds).

The hemoglobin was 13 Gm. (87 per cent). The red blood cells numbered 4,470,000 per cubic millimeter of blood, and the cell pack was 47 per cent. The white blood cell count was 9,600 with a normal differential. The sedimentation rate was 30 mm. per hour by the Wintrobe method. The Mazzini test of the blood gave a negative reaction. The bleeding time was three minutes and the coagulation time five minutes (Lee-White method). Urinalysis was normal. An electrocardiogram was interpreted as normal. A roentgenogram of the chest showed an opacity in the lower portion of the right lung field resembling a bunch of grapes, pathognomonic of a pulmonary arteriovenous varix or angioma (fig. 7). Angiocardiograms made at the Cardiovascular Research Unit of the Veterans Administration Hospital, Washington, D. C., showed this lesion more sharply and revealed smaller lesions in the right lung (figs. 8 and 9). The main lesion on the right obviously involved the middle lobe, with large vascular channels leading into and out of the angioma. The lateral view showed that the angioma was a multiple one involving a large portion of the middle lobe.

The patient was seen a few weeks later in an attack of arthralgia of the right foot. The white blood cell count was 10,400 with a normal differential. The sedimentation rate was 34 mm. per hour (Wintrobe method), and the blood uric acid 4.3 mg. per hundred cubic centimeters. The oral temperature was normal.

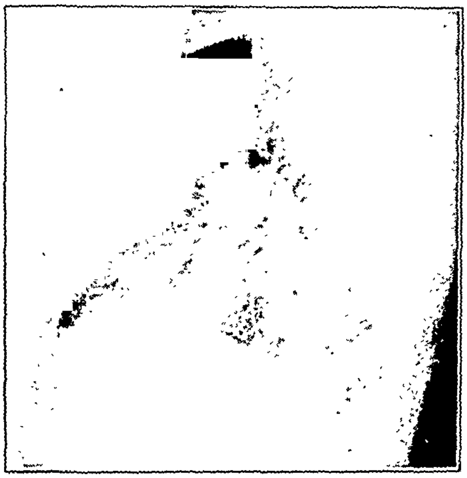

Fig. 9 (case 2).—Angiocardiogram (four seconds), lateral view.

The main diagnoses were palindromic rheumatism and Rendu-Osler-Weber's hereditary hemorrhagic telangiectasia with pulmonary angiomas (arteriovenous fistulas). We could think of no way in which the arthritic episodes could be linked with pulmonary varix.

COMMENT

These 2 cases are fairly representative of the others which have been reported. Operative intervention in the first case was necessary. Whether we were right in not advising surgical treatment in the second is debatable. From the standpoint of symptomatology it did not appear necessary. It was believed that if the patient began to have symptoms of hypoxemia and polycythemia surgical treatment could be instituted. The only serious cause of worry before such symptoms develop is pulmonary hemorrhage, which was fatal in 3 cases. When the fistulas are well within the pulmonary parenchyma the danger of serious hemorrhage is not as great as when they are subpleural.

Surgical treatment is the only form of treatment of value, although bloodletting gives temporary relief from polycythemia. The polycythemia, however, is compensatory and in that respect is laudable. Surgical treatment has varied from ligation of the feeder vessels and local excision to removal of two lobes of the lung and part of a third. Ligation alone is not satisfactory.

Operative intervention is well tolerated; only 2 of 26 patients died postoperatively. Table 5 lists all of the 45 cases collected and gives the important data of each.

SUMMARY

Pulmonary arteriovenous fistula is being reported with increasing frequency. Forty-three cases have been collected and 2 new ones added. The lesion is often part of the hereditary hemorrhagic telangiectasia of Rendu-Osler-Weber's syndrome. The manifestations are cyanosis, clubbing, dyspnea, polycythemia, bruit and a typical pulmonary shadow. Pulmonary hemorrhage from rupture and thrombosis from polycythemia, especially of cerebral vessels, constitute the mean complications. The treatment is surgical. If the fistulas, which are often multiple, do not occur in too many lobes this is curative.

DIAGNOSTIC VALUE OF CARDIAC AUSCULTATION

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With the rapid progress in diagnostic methods that has taken place during the past few decades in the solution of cardiac problems, there has developed an increasing degree of complexity in the technic employed by the physician. In many cases he no longer can make the proper decision on the basis of his five senses and what he carries in his simple medical kit. Elaborate instruments or tests have become necessary to solve many of the problems. Various blood tests, metabolic studies, electrocardiography, roentgenography, angiocardiography, venous catheterization of the heart and other examinations are necessary in one instance or another before the correct diagnosis can be established. These great advances that have been taking place so rapidly have not been purely of academic interest. They are absolutely essential and have enabled physicians by the application of new therapeutic procedures, medical or surgical, to treat effectively and at times to cure certain patients who formerly were beyond help. Therefore the importance of these advances cannot be minimized.

During the same period of brilliant advances, older and simpler methods of examination have suffered. This is not surprising or incomprehensible. The interest and energy expended in the development of the new have taken place at the expense and sacrifice in the application of the old. The greater the time spent in taking three electrocardiographic leads and later nine and now twelve leads, the less time is left to elicit an adequate history of the case or to auscult the heart properly. The teaching curriculum in the medical schools has become so overwhelmed with new fields of medical and correlated knowledge, that some of the old teaching and emphasis has had to be curtailed. As a result of this change, auscultation of the heart has been neglected. It is now a not uncommon experience that a patient may have a complete cardiac work-up, with roentgen examination and multiple electrocardiographic leads in which diphasic T waves and slight sagging of the S-T segment may be described, and finally may be pronounced to have "some myocardial damage," when careful auscultation in one minute would have revealed an overlooked faint diastolic murmur of aortic insufficiency or a slight presystolic murmur of mitral stenosis. The pity of it all is that the information obtained by auscultation is there for the asking, so to speak. It requires no additional expense in time or money and is available to any physician with no more tools than he always has with him.

DECISIONS BASED ON AUSCULTATION

What is the diagnostic value of auscultation of the heart? There are three different lines of thought that the physician must go through when making decisions from auscultation. When one has acquired deserved confidence in auscultation there are certain possible diagnoses, that otherwise would have to be entertained, which can readily be dismissed. This is an aid in what might be called the destructive or eliminative aspect of differential diagnosis. At times it is extremely important to know what a patient does not have, even if it is not known what the actual diagnosis may be. The second decision that often can be made by auscultation is the determination of a definite positive diagnosis on the basis of certain observations. There are numerous auscultatory observations which are characteristic and some that are pathognomonic of certain conditions The third is the detection of clues which are not of themselves diagnostic, but which make one think of diagnostic possibilities that otherwise might be overlooked.

I shall return to these three types of information to be obtained by means of auscultation and amplify the subject by illustrative experiences.

Dismissal of Certain Diagnoses.—If the physician has attained confidence in his auscultation and after careful examination fails to hear any murmurs whatever, even with the patient turned to the left lateral position or sitting upright, he can fairly safely eliminate the possibility of subacute bacterial endocarditis or chronic rheumatic valvular heart disease. In such circumstances there will be exceptions, as there are to all useful guides in clinical medicine, but they will be rare. I have seen instances in which subacute bacterial endocarditis was supposed to be present in the absence of any murmurs, only to find a clear aortic diastolic murmur and be able to demonstrate it to the examiner who had previously overlooked it. However, in several instances in which prolonged fever and sweats were thought to be due to bacterial endocarditis and no murmur at all could be heard, I ventured to state that some other cause for the symptom would be found. Tubercle bacilli were later discovered in the sputum samples. I must admit that on exceedingly rare occasions bacterial endocarditis was present when I could hear no murmurs. Furthermore, when following a patient who had rheumatic fever in the past, the one important observation is the presence or absence of murmurs. If such a patient is examined one or more years after the bout of rheumatic fever and murmurs are not heard, it is safe to say that the heart has escaped any important permanent damage. In fact, if there is any kind of a murmur, especially a diastolic but even a systolic, one can either be sure he is dealing with organic valvular disease or at least he cannot dismiss that possibility. It is clear, therefore, that no matter how ill or how well the patient may be or how inconspicuous the physical abnormalities may be, auscultation is the one method that often eliminates the possible diagnosis of valvular disease.

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Read before the Section on Internal Medicine at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

Establishment of a Definite Diagnosis.—Pericardial Friction: The second and more important contribution that may be derived from auscultation is the establishment of a definite diagnosis on the detection of certain abnormal conditions. The palpation of a mass in the lower part of the abdomen may be indicative of a fibroid of the uterus, an ovarian cyst, a pregnant uterus, a full bladder or some tumor. Localized rales in the lungs may be due to tuberculosis, neoplasm, pneumonia, bronchitis, congestion, pulmonary infarction or a variety of other conditions. But the detection of pericardial friction almost invariably means acute pericarditis. I recall an instance in which the discovery of a faint pericardial friction sound was the sole observation that saved a physician from performing what would have proved to be an unnecessary and hazardous abdominal operation. All the features of the case pointed to an acute condition of the upper part of the abdomen that should have required an immediate exploratory operation. The most probable diagnosis appeared to be a perforated peptic ulcer, but the slight pericardial scratch was the telltale sign pointing to the heart as the cause of the severe epigastric pain.

Apical Murmur: In the overwhelming majority of cases the presence of an apical rumbling murmur, diastolic or presystolic in time, is diagnostic of mitral stenosis. When one becomes familiar with the character of this murmur its detection establishes the correct diagnosis even if it is faint or present only after effort or with the patient lying on his left side. The same is also true of a faint early diastolic murmur at the base of the heart in the diagnosis of early aortic insufficiency. In some cases there will be no reliable method apart from auscultation which will aid in the diagnosis of either slight mitral stenosis or aortic insufficiency, for the roentgenograms and electrocardiograms may reveal essentially normal conditions and even symptoms of heart disease may be absent or equivocal.

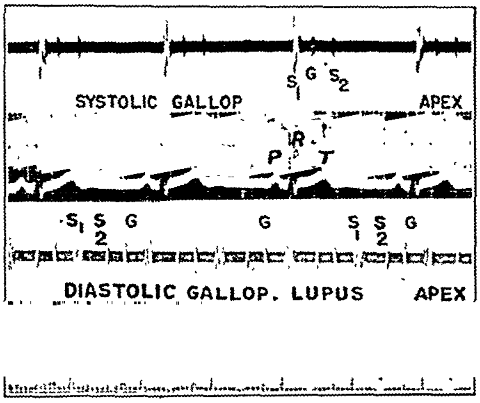

Fig. 1.—Upper tracing shows normal systolic gallop. Note that the extra sound (G) comes between a normal first sound (S_1) and a normal second sound (S_2). The subject was a normal healthy man aged 34. Lower tracing shows abnormal diastolic gallop. Note that the extra sound (G) comes between S_2 and S_1. The patient had lupus erythematosis with myocardial involvement.

Systolic Murmur: It is not to be inferred that the detection of cardiac murmurs always leads to a decisive diagnosis. There are many instances in which the murmurs are so characteristic that no other evidence is needed to be certain of the diagnosis. There are many other instances, especially when systolic murmurs are involved, in which proper evaluation may be extremely difficult. This is not the occasion to discuss the intricate problem of the interpretation of systolic murmurs. It is well known that systolic murmurs may be heard in both valvular and nonvalvular disease of the heart and may be present in patients who are suffering from noncardiac disease or no disease at all. This does not detract from the value of auscultation, but rather presents the physician an additional challenge to correctly analyze the significance of physical observations. In general it may be said that faint systolic murmurs (grade 1 or 2) may be heard with or without heart disease but louder ones (grade 3 or more) will seldom be present in normal persons and usually will indicate some form of heart disease.

Discovery of Diagnostic Clues.—The third general type of information to be derived from auscultation of the heart is what one might call clues to diagnosis. A patient may be stricken with severe epigastric pain resembling acute pancreatitis or perforated peptic ulcer, and the heart may show a classic diastolic gallop. This would lead one to suspect that the heart is the cause of the pain and would be followed by electrocardiographic studies which might confirm the diagnosis. Not infrequently the detection of a snapping first sound while the heart rate was very rapid and grossly irregular in the absence of any murmurs led me to suspect the diagnosis of mitral stenosis. Only later when the rate had slowed after digitalis therapy did the characteristic diastolic murmur become audible. At times a hyperactive first sound, not explicable otherwise, may arouse one's suspicion that thyrotoxicosis is present. I recall instances in which there was little else to make me think that the patient had hyperthyroidism. There are other auscultatory phenomena such as the effect of deep breathing, carotid sinus stimulation or an exercise test which enables the physician to make certain presumptive deductions that can later be more accurately confirmed by graphic methods. An example of this sort is the observation of an exact doubling of the heart rate from 70 to 140 after brief effort. This would make one strongly suspect the presence of auricular flutter with an auricular rate of 280.

Arrhythmias: Apart from the evidence of valvular and pericardial disease that may be obtained by simple auscultation, the detection of arrhythmias or changes in the quality of the heart sounds is important. It is evident that nowadays the widespread use of the electrocardiograph, and especially the availability of direct writing apparatus which makes the information immediately available, has made it less imperative to diagnose the various cardiac irregularities by the use of the stethoscope. The advantages, however, of quick bedside methods of auscultation are obvious, for thereby much time and expense can be saved. With increasing experience it has become possible to recognize or to suspect the presence of most of the disturbances in cardiac rhythm by simple bedside auscultation. Unfortunately, much of this valuable information is overlooked and not utilized.

Gallop Rhythm: In considering the quality and intensity of the heart sounds and the significance of changes in the character of the sounds, there is a woeful lack of understanding among many physicians. The presence of a tripling of sounds (that is, a gallop rhythm) is still too frequently overlooked. When the extra or third sound of a gallop can be identified as occurring in diastole, it almost always indicates fairly grave heart disease. What is not sufficiently appreciated is that there are gallops in which the extra sound occurs during systole that are comparatively benign (fig. 1). In fact, a midsystolic gallop is not infrequently detected in persons who do not have heart disease.

Generally it is possible to distinguish the one type from the other by auscultation. Only occasionally will it be necessary to employ graphic methods to make this differentiation.

INTERPRETATION OF FIRST HEART SOUND

What is more important is the confusion that prevails concerning the significance of the loudness and character of the first heart sound. I have asked many physicians, even specialists in the field of cardiology, what inference they draw from the detection of a muffled or exceedingly weak first heart sound. Almost invariably the reply is that it denotes a poor heart muscle, with the connotation that grave heart disease is present. Mere recollection of one's daily experience ought to throw doubt on this conception. Many patients are observed to have various forms of advanced cardiac disease, even with gross congestive failure, who display perfectly good or even loud first heart sounds. Contrariwise, others who have faint and occasionally inaudible first sounds seem quite fit. This problem deserves more detailed discussion.

Both heart sounds may be decreased in intensity if there is intervening tissue or space between the heart and the outside of the chest wall. Patients with severe emphysema, large pericardial effusion or extreme obesity may have faint heart sounds (fig. 2). That is because even normal heart sounds will be fainter to the ear after traversing a greater distance. Likewise in moribund states, when the heart is beating feebly, the sounds may be decidedly decreased in intensity. In the foregoing circumstance both heart sounds are similarly muffled and there is no selective effect on one of the sounds.

The situation is entirely different when the first heart sound is decreased and the second is not similarly affected (fig. 2). The foregoing factors cannot be the cause, as they could not produce a discriminating effect on only one of the sounds. What produces the first sound, and what determines its intensity? It is due mainly, if not entirely, to the closure of the mitral and tricuspid valves. If there is a muscular component produced in the myocardium it is practically inaudible. I have on many occasions listened to heart beats when certain cycles showed inaudible or barely detectable first sounds (with clear second sounds) that produced little, if any, vibration even in the phonocardiographic tracings, and yet the pulse for that beat was normal (second tracing, fig. 2). In other words, the strength of the contraction producing that extremely feeble first sound was just the same as that of other contractions producing first sounds five or ten times as loud which occurred several seconds later. (Compare second with last beat in middle tracing of fig. 3.) There must be some other influence at work besides the vigor of ventricular systole that profoundly affects the loudness of the first sound.

The abruptness or quickness of ventricular systole affects the first sound. When the contraction is hyperactive, as may occur in hyperthyroidism (fig. 2) or anemia, during the effort or emotion, or with certain fevers (especally acute rheumatic fever) the first sound is often accentuated. The valve leaflets close more abruptly, and a brisk sound results. Fluoroscopic examination in these circumstances not infrequently may show a "snapping" type of beat. In most of these conditions it is now well known that the velocity of blood flow is accelerated. The situation may be compared to the dull sound produced when a loose handkerchief is made taut slowly and the sharp sound when the same maneuver is performed abruptly.

The observations of Wolferth and Margolies[1] and particularly of Dock[2] have thrown further light on the changes in the intensity of the first sound. At first it was observed that in complete heart block, when the ventricles are beating very slowly and regularly and the auricles more rapidly, regularly and independently, the first sound varies greatly in intensity[3] (fig. 3). Then it was noted that there was some relationship between the auriculoventricular interval (P-R interval) and the loudness of the first sound.[1] The first sound was loudest when the P-R interval was exceedingly short, about 0.08 second, and was generally faint at intervals greater than normal, 0.22 to 0.3 second. From these and other observations Dock suggested not only that the position of the auriculoventricular valves at the moment of ventricular systole determined the intensity of the first sound but that the sound was entirely valvular in origin and had no muscular component. From these studies it has been inferred that when the mitral and tricuspid leaflets are wide apart or deep and low in the ventricular cavity the instant the ventricles contract, the sound produced as they close will be different (probably louder) than when they are nearer together or at a higher level. If the ventricles contract soon after the auricles the sound will therefore be loud; if there is delay between auricular and ventricular systole the valves will have had a longer opportunity to float upward and nearly close, and the first sound will be faint.

CLINICAL VALUE OF INTERPRETATION OF FIRST HEART SOUND

Entirely apart from the foregoing theoretic considerations, as a matter of tested clinical experience, attention to the intensity of the first sound as heard at the apex of the heart will often enable the observer to estimate the length of the P-R interval and to recognize conditions in which there is a short P-R interval, others with a prolonged P-R interval (first degree heart block) and those in which this interval is varying, such as second and third degree heart block (figs. 2 and 3). In fact, detection of these changes in the intensity of the first sound is the only reliable bedside method of making these diagnoses. If the heart rate is regular and the first sound decidedly decreased while the second sound is normal, one can be fairly certain that the P-R interval will be at least at the upper limit of normal or delayed systole (fig. 2, second tracing). Similarly, if the rate is regular and slow (30 to 40) and the first sound changes in intensity with sudden loud explosive sounds (bruit de canon) one can be certain that complete heart block with dissociation of the auricles and ventricles is present (fig. 3). This diagnosis can even be made when the ventricular rate is within the normal range (50 to 70) if the foregoing auscultatory sign is present. The usefulness of this simple auscultatory sign is well illustrated by the fact that a young house officer made an immediate diagnosis of complete heart block in a patient with acute coronary thrombosis, who showed a regular heart rate of about 60 because the first sound illustrated this peculiarity called bruit de canon. The diagnosis was immediately confirmed by electrocardiograms. One certainly would not ordinarily think about complete heart block with a heart rate within normal limits, yet simple auscultation revealed the true type of disturbance in the cardiac mechanism.

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[1] Wolferth, C. C., and Margolies, A.: The Influence of Auricular Contraction on the First Heart Sound and the Radial Pulse, Arch. Int. Med. **46**: 1048 (Dec.) 1930.

[2] Dock, W.: Mode of Production of the First Heart Sound, Arch. Int. Med. **51**: 737 (May) 1933.

[3] Strazhesko, N. D.: Adams-Stokes Disease, Russ. Vrach. St. Petersburg **5**: 603, 1906.

Another illustration of the value of noting the character of the first sound is the following experience. A man about 50 years of age came to the hospital because he had had a fainting spell. He felt well otherwise and was able to do his ordinary work. Physical examination revealed entirely normal conditions. The blood pressure was normal. The heart was not enlarged, and there were no murmurs or irregularities. Several physicians had examined the heart without detecting anything remarkable. When I suggested that they listen to the heart again and pay particular attention to the first sound, they only then observed that it was almost inaudible. When asked what that finding might signify, they all replied that it might mean that the heart muscle was weak. The patient, however, was strong and had no breathlessness or pain in the chest on effort. Applying the reasoning previously discussed herein, I suggested that he might well have first degree heart block with a delayed P-R interval. The electrocardiogram which was immediately taken showed the P-R interval to be 0.22 second. This not only confirmed the clinical diagnosis but threw light on the patient's complaint. Anyone with conduction difficulty might well have had an Adams-Stokes attack (syncope due to arteriosclerotic heart disease). It was later learned that he had been previously studied and found to have temporary complete heart block. There are several important inferences to be drawn from such an experience. First, abnormalities in the first sound (like other auscultatory phenomena) will not be detected unless deliberately looked for. Second, it is an error to interpret a weak first sound, when the second sound is normal, as indicative of a so-called "weak heart muscle." Finally, it is possible to recognize, or at least to suspect, first degree heart block by simple auscultation.

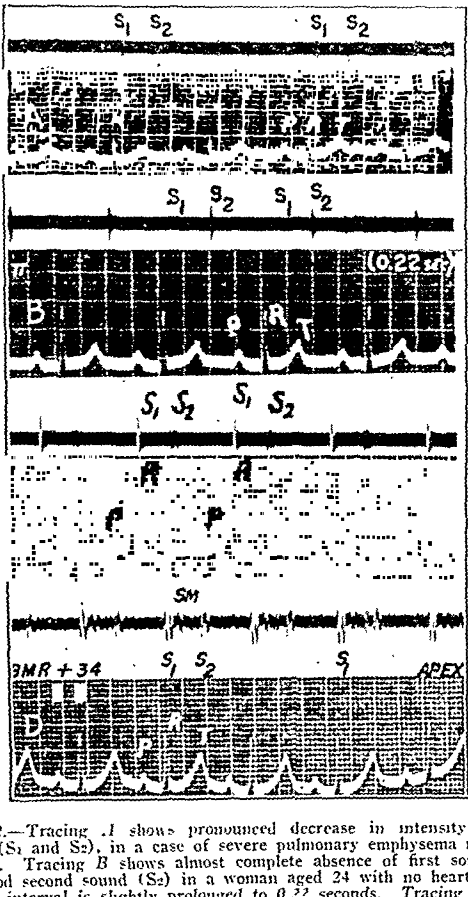

Fig. 2.—Tracing A shows pronounced decrease in intensity of both sounds (S_1 and S_2), in a case of severe pulmonary emphysema in a man aged 55. Tracing *B* shows almost complete absence of first sound (S_1) with good second sound (S_2) in a woman aged 24 with no heart disease; the P-R interval is slightly prolonged to *0.22* seconds. Tracing *C* shows accentuated S_1 and exceedingly short P-R interval (0.08 second) in a woman aged 24 with hypertension but no cardiac difficulty. Tracing *B* shows accentuated S_1 in a girl aged 20 with thyrotoxicosis. Note slight systolic murmur (SM).

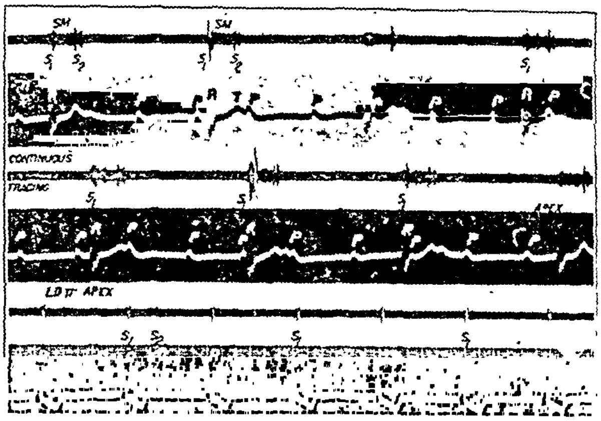

Fig. 3.—Upper two tracings are continuous and show decided change in intensity of the first heart sound (S_1) in a man aged 33 with complete heart block. Note that S_1 is loud when the P-R interval is short and faint when P-R is long. In the last cycle in the second strip S_1 is absent (only the systolic murmur is seen). Lowest tracing shows constant first heart sound (S_1) in a man aged 72 with complete block and auricular fibrillation or idioventricular rhythm.

If a changing time relationship between auricular and ventricular systole alters the intensity of the first heart sound, then any condition in which the auricles and ventricles are not contracting in constant relationship with each other should produce changing intensity of the first sound. This occurs in complete heart block. It should follow that when there is complete block and the auricles are fibrillating the first sound ought to be constant and not vary, for then auricular systole does not occur and would not affect the position of the auriculoventricular valves. That this is true is well illustrated in figure 3. Furthermore, there ought to be a difference between the heart sounds in ordinary paroxysmal auricular tachycardia and in paroxysmal ventricular tachycardia.[4] Although in both the heart rate may be regular and rapid (160 to 200), in the former the auricles are contracting at the ventricular

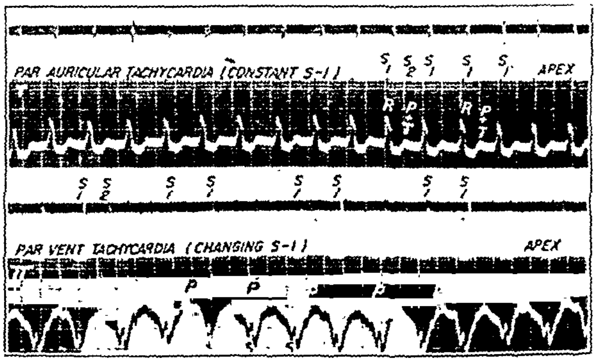
PAR AURICULAR TACHYCARDIA (CONSTANT S-1)
S_1 S_2 S_1 S_1 S_1
APEX
R P T
R P T
S_1 S_2 S_1 S_1 S_1 S_1 S_1 S_1 S_1
PAR VENT TACHYCARDIA (CHANGING S-1)
APEX
P P
S S

Fig. 4.—Upper tracing shows constant intensity of S_1 in a woman aged 50 with paroxysmal auricular tachycardia. Lower tracing shows changing intensity of S_1 in a man aged 60 with paroxysmal ventricular tachycardia following coronary thrombosis. In both the ventricular rate is about 150, but in the upper the P-R interval is constant and in the lower it varies.

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[4] Levine, S. A.: The Clinical Recognition of Paroxysmal Ventricular Tachycardia, Am. Heart J. 3: 177, 1927.

rate and at a constant short interval before the ventricles. That should result in first heart sounds of uniform intensity. In the latter, the auricles generally contract independently and at a slower rate than the ventricles, which should result in a changing intensity of the first sound. Actual clinical experience bears out these theoretic predictions (fig. 4).

The distinction between the ventricular and the auricular type of paroxysmal tachycardia which one may make by simple auscultation is exceedingly important. It may not be possible to obtain an electrocardiogram, and the condition may require immediate attention. Furthermore, most of the procedures that are effective in controlling auricular tachycardia are valueless in the ventricular type. Finally, ventricular tachycardia is generally a desperate complication of a serious underlying cardiac condition and requires prompt treatment. Digitalis, which is so commonly employed in cardiac emergencies with exceedingly rapid heart rates, will be not only useless but harmful in this condition, whereas quinidine is often effective and may be life saving. There will be times when the first suspicion that the patient has paroxysmal ventricular tachycardia will be derived from simple auscultation.

I have cited only a few examples of auscultatory observations that generally can be readily made by any physician with a simple stethoscope. There are many others which need not be discussed here. The purpose of this communication is to revive interest in this ancient method of examination, because much useful information at present is being overlooked by the members of the medical profession.

SUMMARY

There are many auscultatory observations which at present are overlooked or misinterpreted that can easily be made and properly analyzed by any physician by the simple use of the stethoscope. Some of these observations are practically pathognomonic, and others are strongly suggestive of certain cardiac diagnoses that otherwise would not be made. The decision can often be made in a few minutes, and occasionally the condition is critical and requires immediate institution of therapy. It is urged that medical teachers and practitioners pay more attention to the ancient art and science of auscultation of the heart.

ABSTRACT OF DISCUSSION

Dr. Howard B. Sprague, Boston: It is wise of Dr. Levine to bring back to attention the value of the accuracy of diagnosis by simple methods. The methods which Dr. Levine has noted are of extreme importance. I would like to stress what he says about the possibility of ruling out what the patient does not have. This would eliminate perhaps 50 per cent of the possibilities with respect to diagnosis. Obviously, one must remember that the most serious types of heart disease, including coronary disease with angina pectoris, cannot be diagnosed by any method except by listening to the patient's story. A pericardial rub may be the only definite clue to obscure illness, either the transient rub of rheumatic infection or the more persistent rub of the so-called idiopathic pericarditis. The ability to recognize the normal third heart sound is of great importance because it prevents overdiagnosis of heart disease, and training in this recognition enhances one's ability to discover the middiastolic murmur of left ventricular dilatation which comes directly after the third heart sound in many cases of rheumatic carditis and which may disappear with recovery. It also improves one's critical analysis of the pathologic gallops, the commonest of which is an exaggeration of the third sound mechanism. The range of intensity of the normal first heart sound is great, measured in terms of energy, as was shown by Williams and Dodge years ago. The amount of energy recorded in the loudest normal first heart sound which they examined was forty times that of the weakest normal first heart sound. These sounds may be of low frequency, and the ear may not interpret them as loud sounds even though they have considerable intensity. Therefore, I wish to second Dr. Levine's statement that weakness of the first heart sound, or rather of both sounds, is not commonly a manifestation of cardiac weakness. The statements that he made about the variation of the loudness of the first heart sound indicated an important clinical observation. The mechanism of this is not well explained at present, and experimental work would seem to indicate that the auricle in contraction actually tends to bring the mitral cusps together, if not in apposition, at the end of the contraction. I would stress the necessity of using both an open bell and the diaphragm stethoscope in examining all cardiac patients in order to get the discriminating effect of these two types of chest pieces. The skill in the use of the stethoscope which has been attained by Dr. Levine makes it possible to dispense with the more elaborate kit of medical tools, especially in emergencies.

PROPHYLACTIC (BCG) VACCINATION TO CONTROL TUBERCULOSIS

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Through the offices of the World Health Organization the governments of various countries have been solicited to sanction prophylactic vaccination against tuberculosis, through the use of BCG vaccine, of 15,000,000 children and young adults who are nonreactors to tuberculin. In the United States and Canada pressure is being exerted in various sections to increase the use of this vaccine in an effort to control tuberculosis. These programs can readily gain enthusiastic lay support, simply because of their magnitude, from those without a clear understanding of the problem of tuberculosis. Any dissension about the concept behind this approach to the control of tuberculosis must be objective. The present discussion of the use of BCG vaccine will be on a factual basis.

SAFETY

One of the chief claims of those now promoting the use of BCG vaccine is that it is harmless. All investigators who have studied the problem firsthand can agree that this living culture of bovine tubercle bacilli will not produce progressive tuberculosis provided that it is properly prepared, thoroughly controlled and properly given. The safeguards now in effect in the preparation and use of BCG vaccine are to be highly commended; however, it is essential to keep in mind that this relatively nonpathogenic strain had its origin from a highly pathogenic bovine type of tubercle bacillus and that, until such time as the factors governing the pathogenicity of tubercle bacilli are known, BCG vaccine must not be considered as a virus fixé.

The sponsors of mass prophylactic vaccination must rely heavily on the hope that the increased resistance to tuberculous infection will be sufficient to protect against future infection, for under present conditions exposure to infection is unavoidable. It is this phase of the vaccination program that creates concern relative to the eventual effectiveness of any prophylactic vaccination against tuberculosis.

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Read before the Section on Diseases of the Chest at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

EFFECTIVENESS

Thorough studies on experimental animals have already been conducted to determine the effectiveness of BCG vaccine, and the facts obtained must not be disregarded. It has been demonstrated conclusively that increased resistance to infection with virulent tubercle bacilli is produced through vaccination; however, this resistance is not complete. The most favorable results that I obtained were that 5 per cent of the vaccinated animals subsequently infected with virulent bacilli died from progressive tuberculosis as quickly as though prophylactic vaccination had not been given; 45 per cent showed small, slowly progressing tuberculous lesions, and lesions did not develop in 50 per cent. I conducted one experiment with cattle which illustrates the difficulty of assessing the prophylactic effect of BCG vaccination. Twelve of 24 steers of approximately the same age were vaccinated with BCG, and 12 were kept as controls. Nine months after vaccination 2 vaccinated animals were killed, and the only evidence of tuberculosis was a necrotic focus at the site of vaccination. Every animal, control and vaccinated, was then given 10 mg. of virulent bovine tubercle bacilli intravenously. Within six weeks 3 animals, 2 controls and 1 vaccinated, succumbed to fulminating generalized miliary tuberculosis. During the ensuing nine months no more animals died, and all were then killed. Postmortem study showed that every animal had small tuberculous lesions in the lungs and other organs and that it was not possible to determine from either the gross or microscopic nature of the lesions which animals had been vaccinated. The difficulties of assessing the value of vaccination with BCG in experimental animals under controlled conditions emphasize the greater difficulties encountered in experiments in man because of the existence of uncontrolled and uncontrollable conditions.

PATHOGENESIS AND EPIDEMIOLOGY OF TUBERCULOSIS

It has long been taught that tuberculosis is a family disease and that young children and young adults especially are affected. This is unfortunate, for it is generally believed that if tuberculosis fails to develop before persons reach 40 years of age, they will not contract the disease. This belief has led to an emphasis of the problem of tuberculosis in young persons and to an absence of concern over the much more serious problem of tuberculosis in adults beyond the fourth decade of life, as demonstrated by the present program for mass vaccination with BCG of millions of children and young adults who do not react to tuberculin. Tuberculosis cannot be combated effectively without a thorough consideration of the pathogenesis and epidemiology of the disease.

Infection with tuberculosis is greatest where masses of human beings are congregated within limited areas. It is a herd disease that depends for its propagation on the passage of tubercle bacilli, most often through the air, from one person to another. Recent experimental studies have demonstrated that droplets of air containing tubercle bacilli must be less than 15 microns ($\frac{1}{2,000}$ of an inch) in diameter before they can penetrate the alveolar spaces of the lung and start an infection. Indeed, the tuberculous process has a small beginning.

An examination of the problem of tuberculosis in metropolitan New York, the largest and most congested city in the country, is most revealing. The data contained in the vital statistics of the United States indicate that during the past half-century a great change for the better has occurred in the mortality rate in tuberculosis. For present consideration data from the vital statistics of the city of New York for the years 1905 and 1945 will be used, although it is recognized that all such data contain errors of diagnosis that can hardly be canceled simply because a large volume of data can be utilized. Between the years 1905 and 1945 the number of deaths from all causes increased 9 per cent and the number of registered deaths from tuberculosis decreased 64 per cent. Although the population showed a decided increase during these four decades, the total number of deaths decreased 82 per cent among persons less than 15 years of age and 60 per cent in the age group 15 to 40 years of age but increased 128 per cent in persons over 40 years of age. Deaths from tuberculosis in these same age groups decreased 91, 77 and 28 per cent, respectively. These phenomenal changes occurred without any program of mass vaccination against tuberculosis, and it is difficult to determine the actual effect of any single measure that has been used against the disease.

It is understandable that the seriousness of tuberculosis in young children should be emphasized, for once it has gained a foothold, especially in babies less than 1 year of age, it is a rapidly progressive and highly fatal disease. However, even forty years ago such deaths accounted for only a small percentage of the total deaths for tuberculosis. In 1905 in the city of New York 37 per cent of all deaths occurred among persons less than 15 years of age, and of these only 4 per cent died from tuberculosis. Only 11 per cent of all deaths from tuberculosis occurred in children under 15 years of age, largely in young infants, whereas 31 per cent occurred among persons over 40 years of age. In 1945 deaths from tuberculosis in persons less than 15 years of age accounted for only 3 per cent of all such deaths, while 61 per cent occurred among persons over 40 years of age. There is no intention to detract from the tragedy of tuberculosis in infants, yet it is evident that the problem of tuberculosis in adults is far more serious. Furthermore, it is understood generally that the prevalence of tuberculosis in children is related directly to the disease in adults.

TUBERCULOSIS IN ADULTS

A statistical statement used frequently and effectively is that today tuberculosis ranks first among diseases as a cause of death in the age group 15 to 35 years. The significance of this statement cannot be evaluated properly except in relation to other facts. In this age group during the last four decades there occurred in New York City a decrease of 60 per cent in the number of deaths from all causes and 77 per cent in the number of deaths from tuberculosis. In 1905 58 per cent of all registered tuberculous deaths occurred in persons between the ages of 15 and 40 years, whereas in 1945 the percentage was only 36. In spite of this phenomenal change tuberculosis still ranks first among all diseases as the cause of death in this age group. This merely indicates that tuberculosis has not decreased as much as have other diseases. Vital statistics of the United States for the year 1947 indicate that only 26 per cent of all deaths due to tuberculosis occurred in persons in the age group 15 to 35, whereas 70 per cent occurred in older adults. It is evident that the problem of tuberculosis in young adults is linked to the problem in older adults. An oversimplification and a distorted view of the problem of tuberculosis results whenever emphasis is given to the rank of this disease as a cause of death in any specified age group.

Formerly it was held that progressive tuberculosis among adults resulted from recrudescence of a primary tuberculous infection contracted in early childhood. Tuberculin surveys, clinical investigations and careful studies of data compiled at necropsy reveal the fallacy of this dogma. Progressive tuberculosis in young adults represents largely a primary infection acquired in adult life. Hence, prophylactic vaccination with BCG now is urged for young adults. Since increased resistance to tuberculous infection may be gained through vaccination, it may seem both unwarranted and unwise to inject a note of caution at this point. However, of those who acquire a primary infection, or what might be called a natural vaccination, in adult life only a small percentage ever manifest clinical signs of the disease. Furthermore, there is no guaranty that either an artificial or a natural vaccination will prevent the development of a serious reinfection later in life.

REINFECTION

In the December 1948 issue of the *American Review of Tuberculosis* I have pointed out that in adults over 40 years of age, especially in men, both minimal pulmonary tuberculosis and deaths from tuberculosis are caused in large part by reinfection after a previous infection had healed.[1] In spite of a natural vaccination with virulent tubercle bacilli, a new progressive disease may develop. It is this situation that to date has received little attention in programs aimed at the control of tuberculosis. Certain facts contained in vital statistics deserve serious thought. Beyond the age of 40 years deaths from tuberculosis are three times greater among men than among women, and for the country as a whole almost three fourths of all deaths from tuberculosis occur in this age group. Tuberculosis cannot be effectively controlled until the problem of tuberculous reinfection has been met, and it is because of this situation that prophylactic vaccination against tuberculosis as now advocated would seem to be a rather puny weapon.

Tuberculosis is most difficult to evaluate because it seldom occurs in epidemic form and because it has a slow tempo of development in adults. This is shown clearly in the experience of the Metropolitan Life Insurance Company. In this organization all applicants for employment are given a preemployment roentgenologic examination of the chest, and those who evidence pulmonary tuberculosis are not employed. The average age at the time of employment is 20 years, and after employment a yearly roentgenologic examination of the chest is made. Starting with as tuberculosis-free a group as it was possible to assemble, 226 new cases of tuberculosis were discovered between the years 1935 and 1946. Only 7 per cent of these new cases were found in the first year after employment, whereas 65 per cent were discovered more than five years after employment. Of these, almost half had been employed more than ten years. In 90 per cent of cases, careful questioning of these persons with new tuberculous infections failed to reveal any contact with a person known to have tuberculosis. These data were obtained in a nonvaccinated group of adults. It is evident that an enormous task confronts those who anticipate conclusive proof of the value of prophylactic vaccination with BCG on a long-range basis.

It is difficult to obtain decisive results in any program of prophylactic vaccination against tuberculosis. It is extremely doubtful that artificial vaccination can produce results superior to natural vaccination with small numbers of living virulent tubercle bacilli, and yet natural vaccination fails to control the disease. It appears illogical to base a major attack against any disease on a skirmish against a minor phase of the problem. (This is asking the tail to wag the dog.) It is suggested that greater emphasis be given to the major problem in tuberculosis—unrecognized tuberculosis and that due to reinfection in adults over 40 years of age. An effective solution to this problem would make the use of prophylactic measures in youth unnecessary.

SUMMARY

The chief concern in mass prophylactic vaccination is not the vaccine but rather the implications relative to the control of tuberculosis. Since the population is mobile, it is illogical to restrict vaccination to the slums or to certain selected groups of young adults such as nurses and physicians, for other young persons are also exposed to infection and should receive the benefit of this procedure. If every person less than 25 years of age in the United States had been vaccinated with BCG in 1946 and if perfect protection had been attained (a doubtful premise), in what manner could the vital statistics on tuberculosis have been affected in 1947? If there had been no deaths from tuberculosis in persons less than 25 years of age in 1947 only one seventh of the registered deaths from this disease would have been erased, and it seems probable that the majority of deaths remaining in the records would have been related to disease acquired subsequent to the complete healing of a natural vaccination. One need not disagree with the concept of vaccination as a procedure to hold that an effective control of tuberculosis cannot be obtained without a major attack on the source from which the disease is spread. The present program of mass vaccination with BCG does not touch this problem, and it would appear illogical to anticipate that artificial vaccination could succeed where natural vaccination has failed.

ABSTRACT OF DISCUSSION

DR. ROBERT J. ANDERSON, Washington, D. C.: The effect of tuberculosis on the people of this country and the world warrants consideration of any potential factor that might aid in the control of this disease. Although the tuberculosis death rate in this country had been depressed to 33 per 100,000 population in 1947, almost 50,000 persons died from tuberculosis. Dr. Medlar has depicted the changing effect of tuberculosis among persons of various ages. Proportionately, more and more of the deaths from tuberculosis are occurring in middle-aged and elderly persons and fewer and fewer in young persons, with declining death rates for all ages. This observation indicates the necessity for careful study of the groups to whom BCG vaccine or any other immunizing agent might be given, for with an adequate control program it should be possible to be rationally selective in determining the groups to receive vaccination. This will also require careful study of the tuberculin sensitivity levels of the population geographically, socially and by age groups. The effect of the vaccine on man must be studied in terms of changed levels of tuberculin sensitivity, of duration of sensitivity and effectiveness and of the occurrence of pulmonary tuberculosis as physicians know it. Conflicting observations and conclusions in the several fields touching on the problems of prophylactic vaccination necessitate more investigative work. The effect of BCG vaccine on man and its contribution to health must be measured carefully in the same circumstances which produce tuberculosis in some persons and leave others untouched. This study should produce opinions well grounded in fact. The extensive foreign programs now well under way may result in such information. In this country, however, the facts should be sought deliberately. Dr. Medlar pointed out the difficulties of doing such work with tuberculosis. But these are difficulties which must be overcome. I urge an intensification of control efforts in seeking out persons with tuberculosis, rendering them noncontagious through isolation and treatment and reestablishing them as normal members of society. BCG vaccination does not possess the property of producing absolute immunity and can only be contributory to the control of tuberculosis. Danger lies in the creation of a false sense of security for those who are vaccinated with BCG unless the technics which lessen the hazards of contracting tuberculosis are practiced rigorously.

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[1] Medlar, E. M.: The Pathogenesis of Minimal Pulmonary Tuberculosis. A Study of 1,025 Necropsies in Cases of Sudden and Unexpected Death, Am. Rev. Tuberc. 58: 585-611 (Dec.) 1948.

Dr. Henry C. Sweany, Chicago: It has been a quarter of a century since Calmette reported his rather inconclusive results with BCG vaccination. Since then there has been little enthusiasm for its use outside of France, Scandinavia and Latin America. The reason lies in the many uncertainties in such a vaccine and in the difficulties of establishing proof of its stability and effectiveness. Recently, new interest has been aroused by the work of Holm in Denmark and Aronson, Ferguson, Rosenthal and others in this country. The best argument in favor of vaccination with BCG seems to be that natural resistance gained from small infections has protected the race from devastating epidemics of the disease. There is little doubt that a completely healed infection protects against another infection. However, this protection is only relative and varies greatly not only in the time that it persists but probably also in its quantitative aspects. The chance of contracting the disease a second time no doubt varies with the severity of the infection from which the patient has recovered. It is rare to find tuberculosis developing in a person who has made a complete recovery from one attack of the disease. BCG vaccination, however, cannot be expected to afford the same protection as an attack of the disease. Still it will give some protection. It is probably valuable when used to give relative protection to uninfected persons, such as nurses and technicians, who work with or come in contact with tubercle bacilli. In other situations it may be useful in inverse proportion to the effectiveness of public health measures, as in primitive, thickly populated and war-torn countries. I would also add, in homes where it is impossible to isolate infants from persons who are carriers of the tubercle bacillus. There are situations, however, in which BCG vaccine should not be used. Except in persons who have been exposed to the disease, it should not be used in places with a low morbidity rate such as exists in Iowa and Minnesota because the methods in use are solving the problem, and vaccination with BCG invalidates the best methods of case finding and diagnosis by creating a tuberculin-positive population. Finally, there are possibilities of overemphasizing a BCG vaccination program to the detriment of the regularly established methods of control. *To use any system that tends to supplant, hamper or delay* the present methods used in finding the reservoirs of infection and administering treatment to those with tuberculosis is not good public health practice.

War Burns.—In the last war, burns came next in frequency and severity to orthopedic injuries. In the next war they will probably outnumber all other injuries. In the Royal Air Force in this war probably more than 22,000 men were incinerated with or without other serious injuries. However, 4,500 burned air crew men were recovered from crashed planes or parachuted in flames to safety. Of that number, 3,600 had sustained burns of the hands and of the face. This is a relatively new disease, a disease of wartime which we have called the Airman's Burn. . . . The treatment of this condition which appeared suddenly in 1941 with the Battle of Britain entailed the abandonment of coagulative therapy advised at the outset of hostilities and the institution of an open form of treatment.—Sir Archibald McIndoe, London, England, *Postgraduate Medicine*, September 1949.

SPONTANEOUS NONTRAUMATIC SUBDURAL HEMATOMAS

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Virchow,[1] in 1857, was one of the first to recognize the difference between traumatic and spontaneous subdural hemorrhage.[2] He thought that the latter arose from repeated small hemorrhages of a chronically inflamed dura, and to this condition he gave the name "pachymeningitis haemorrhagica interna." Many since have attempted to evaluate the role of infection in this lesion. Putnam,[3a] who, in 1925, was the first to review this problem thoroughly, observed that infection had not been proved except as a rare etiologic factor. Leary[4] also expressed the belief that the inflammatory cellular reaction is "incidental or accidental."

Baker,[5] in 1938, supported Virchow's views, but he offered no additional proof for the infection theory, and it appears that Putnam's conclusions still hold.

Chronic alcoholism was suggested as a cause of subdural hemorrhage by Kremiansky[6] in 1868. Leary[4] performed autopsy in 50 cases of subdural hemorrhage. In 27 of these there had been addiction to alcohol. He expressed the belief that a person subject to alcoholism is more prone to head trauma, but later stated: "Alcohol and 'C' avitaminosis may be a factor in many cases of massive subdural hemorrhage following trauma which is in most instances minor." Putnam and Putnam[3b] concluded from a survey of the literature that a subdural hematoma had not been produced experimentally by chronic alcoholic intoxication.

Subdural bleeding has been attributed to ascorbic acid ("vitamin C") deficiency. Ingalls[7] reported 5 cases in infants, 3 with scorbutic changes in the bones. He expressed the belief that an underlying bleeding diathesis could be postulated on the basis of scurvy but that the free subdural bleeding was produced by a definite or an insignificant head trauma causing rupture of a bridging dural vein and that organization and removal of the clot were impeded by the scorbutic process, with the result that a neomembrane surrounded free blood.

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Read before the Section on Nervous and Mental Diseases at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

[1] Virchow, R.: Haematoma Durae Matris, Verhandl. d. phys. med. Gesellsch. zu Wüzburg **7:** 134-142, 1857.

[2] There is a difference of opinion concerning the anatomic location of subdural hemorrhage. J. A. Hannah (The Etiology of Subdural Hematoma: Anatomical and Pathological Study, J. Nerv. & Ment. Dis. **84:** 169-186, 1936), Baker,[5] Kaump and Love,[22] and H. C. Trumble (Chronic Subdural Hematoma, M. J. Australia **34:** 106, 1947) expressed the belief that traumatic or spontaneous chronic subdural hemorrhage is intradural (into the layers of the dura). However, according to T. Leary (Subdural or Intradural Hemorrhages? Arch. Path. **28:** 808-820 [Dec.] 1939), Trotter[17] and most investigators, massive acute and chronic hemorrhage is subdural and the common source of bleeding a ruptured vein traversing the subdural space. Leary stated that if the arachnoid is broken, the hemorrhage is usually absorbed and that an intact arachnoid appears to be a necessary element in the production of chronic subdural hematoma.

[3] (*a*) Putnam, T. H.: Chronic Subdural Hematoma: Its Pathology, Its Relation to Pachymeningitis Hemorrhagica and Its Surgical Treatment, Arch. Surg. **11:** 329-393 (Sept.) 1925. (*b*) Putnam, T. J., and Putnam, I. K.: The Experimental Study of Pachymeningitis Haemorrhagica, J. Nerv. & Ment. Dis. **65:** 260, 1927.

[4] Leary, T.: Subdural Hemorrhage, J. A. M. A. **103:** 897-903 (Sept. 22) 1934.

[5] Baker, A. B.: Subdural Hematoma, Arch. Path. **26:** 535-559 (Aug.) 1938.

[6] Kremiansky, J.: Ueber die Pachymeningitis interna haemorrhagica bei Menschen und Hunden, Arch. f. Path. Anat. **42:** 129-161; 321-351, 1868.

[7] Ingalls, P. A.: Role of Scurvy in the Etiology of Chronic Subdural Hematoma, New England J. Med. **215:** 1279-1281 (Dec.) 1936.

Ingraham and Matson[8a] found clinical evidence of "vitamin C deficiency" in 20 of their 98 cases of subdural hematoma in infants. This deficiency could not be considered a uniform or a common finding. They and others[8b, c] believed that head trauma is the important etiologic factor.

Suter[9] expressed the opinion that thiamine deficiency (B_1-hypovitaminosis) may cause subdural bleeding, but there is no confirmation of this theory.

Spontaneous subdural hemorrhage caused by a blood dyscrasia such as hemorrhagic purpura needs no documentation.

Huegenin[10] stated that in 10 per cent of his cases spontaneous subdural hemorrhage was accompanied by pernicious anemia. This high percentage has not been reported by other observers.

Subdural bleeding due to thrombosis of cerebral veins or of the cerebral dural sinuses has been recorded by Bailey and Hass,[11] Tischer,[12] Bucey and Lesemann[13] and me.[14] Miscellaneous causes such as carcinomatosis and sarcomatosis of the dura,[15] violent coughing, syphilis, tuberculosis, rupture of a small cerebral aneurysm,[16] vascular malformation and hemorrhage over a brain tumor have been reported.[16c] A list of conditions causing nontraumatic subdural hemorrhage is given in the accompanying outline.

A discussion of the etiologic factors of spontaneous subdural hemorrhage would be incomplete without an evaluation of the role of *trivial* head trauma in its production.

Trotter,[17] in 1914, disagreed with Virchow and favored the traumatic origin of this lesion. Trotter's view is generally accepted today.[18]

However, Baker[5] expressed the belief that the etiologic background of subdural hematoma is quite variable and that, although trauma may be important in many cases, one must be guarded in accepting a trivial injury as an important cause. King[16b] supported the theory that even in traumatic cases there may be a predisposing factor such as short veins and friability of the vessel walls. Although Munro[19] held that trauma is most important, he agreed that the chronic solid hematomas can be caused by scurvy and blood dyscrasia. Groff and Grant[20] expressed the opinion that there remains in the case of the chronic form of hematoma some underlying factor or factors which necessarily precede the precipitating trauma and that there are numerous instances in which trauma plays no part and the hematoma is said to develop spontaneously. These authors reviewed 15 articles on subdural hematomas, covering a majority of the reports up to 1942. They eliminated single case reports and tabulated a total of 223 cases. It is noteworthy that, although most of the articles were captioned "traumatic subdural hematomas," only 165, or 74 per cent, of the cases were definitely of traumatic origin whereas in 58, or 26 per cent, no history of injury was recorded.

Kunkel and the late Walter Dandy[21] reported a group of 48 cases of subdural hematoma and stressed the fact that in 17, or 36 per cent, no history of even trivial trauma could be elicited despite their "constant interest in this phase of the lesion."

Kaump and Love,[22] after studying 30 postmortem specimens of subdural hemorrhage, 13 of traumatic and 17 of spontaneous type, concluded, "No evidence could be deduced from this series of cases which would put all cases of so-called subdural hematoma into one etiological classification; that is, traumatic or spontaneous." Kaump and Love remarked that since the history is often unreliable and since the etiologic role played by mild trauma is well recognized, this would "tend to make one feel that they may well have all been of traumatic nature."

Leary[4] also was of the opinion that subdural hematomas are practically always the result of injury to the head but that the injury may appear trivial and rarely is severe enough to cause fracture. However, a review of Leary's statistics shows that 54 per cent of his cases concerned persons who were addicted to alcoholic liquors and possibly suffering from ascorbic acid deficiency and that in at least 16 per cent of his entire series there was no history of head trauma.

Although most observers have stated that the blow to the head may be trivial and that the symptoms may come on days, weeks, months or even years after the trauma, there are many who would regard these long latent intervals with suspicion so far as the relation of the head trauma to the cause of the symptoms is concerned.[23] Laudig, Browder and Watson[16a] reported 143 cases of subdural hematoma. In 101 of these cases the injury to the head resulted in immediate unconsciousness. Munro remarked, "We may conclude that the patients suffering from subdural hematoma will present a history of injury to the head followed in practically every case by some degree of unconsciousness and very often headaches." He then went on to say, "However, the latent interval may vary up to years."

Henschen[24] published a series of 121 cases of subdural hematoma, in 30 of which the latent interval

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[8] (*a*) Ingraham, F. D., and Matson, D. D.: Subdural Hematoma in Infancy, J. Pediat. **24:** 1-37 (Jan.) 1944. (*b*) Govan, C. D., Jr., and Walsh, F. B.: Symptomatology of Subdural Hematoma in Infants and Adults, Arch. Ophth. **37:** 701-715 (June) 1947. (*c*) Grunnagle, J. F.: Subdural Hematoma in Infants, Pennsylvania M. J. **50:** 729 (April) 1949.

[9] Suter, A.: Etiology and Pathogenesis of Pachymeningitis Haemorrhagica Interna and Its Relation to B_1 Hypovitaminosis Monatsschr. f. Psychiat. u. Neurol. **113:** 257-320, 1947.

[10] Huegenin, O.: Inflammation of the Dura Mater, Ziemssen's Cyclopedia, American translation, **12:** 386, 1877.

[11] Bailey, O. P., and Hass, G. M.: Dural Sinus Thrombosis in Early Life, Brain **60:** 293, 1937.

[12] Tischer, H.: Differential Diagnosis of Eclampsia; Case of Sinus Thrombosis and Pachymeningitis Haemorrhagica, Zentralbl. f. Gynäk. **66:** 1717-1722 (Oct.) 1942.

[13] Bucey, P. C., and Lesemann, F. J.: Idiopathic Recurrent Thrombophlebitis with Cerebral Venous Thrombosis and Acute Subdural Hematoma, J. A. M. A. **119:** 402-405 (May 30) 1942.

[14] Scott, M.: A Case of Amyotonia Congenita Associated with Occlusion of the Sagittal Sinus and Bilateral Subdural Hygroma, J. Pediat. **34:** 181-194 (Feb.) 1949.

[15] Russell, D. S., and Cairns, H.: Subdural False Membrane or Hematoma in Carcinomatosis and Sarcomatosis of Dura Mater, Brain **57:** 32-48, 1934.

[16] (*a*) Laudig, G. H.; Browder, E. J., and Watson, R. A.: Subdural Hematoma: One Hundred and Forty-Three Cases Studied in Five Year Period, Ann. Surg. **113:** 170-191 (Feb.) 1941. (*b*) King, J. E. J.: Extradural and Subdural Hematomas, Am. J. Surg. **59:** 248-271 (Feb.) 1943. (*c*) Voris, H. C.: Subdural Hematoma, J. A. M. A. **132:** 686-692 (Nov. 23) 1946.

[17] Trotter, W.: Chronic Subdural Hemorrhage of Traumatic Origin and Its Relation to Pachymeningitis Haemorrhagica Interna, Brit. J. Surg. **2:** 271, 1914.

[18] Coleman, C. C.: Chronic Subdural Hematoma, Am. J. Surg. **28:** 341-363, 1935. Jelsma, S.: Chronic Subdural Hematoma, Arch. Surg. **21:** 128 (July) 1930.

[19] Munro, D.: Cerebral Subdural Hematomas: A Study of Three Hundred and Ten Verified Cases, New England J. Med. **227:** 87-95 (July 16) 1942.

[20] Groff, R. A., and Grant, F. C.: Chronic Subdural Hematoma: Collective Review, Internat. Abstr. Surg. **74:** 9-20 (Jan.) 1942.

[21] Kunkel, P. A., and Dandy, W. E.: Subdural Hematoma: Diagnosis and Treatment, Arch. Surg. **38:** 24-54 (Jan.) 1939.

[22] Kaump, D. H., and Love, J. G.: Subdural Hematoma, Surg., Gynec. & Obst. **67:** 87-93, 1938.

[23] Furlow, L. T.: Chronic Subdural Hematoma, Arch. Surg. **32:** 688-708 (April) 1936.

[24] Henschen, K.: Diagnostik und Operation der traumatischen Subduralblutung, Arch. f. klin. Chir. **99:** 67-107, 1912.

was less than a day, in 77 less than a week and in 103 less than three weeks. Voris,[16c] who reported 100 cases of subdural hematoma, remarked, "Any injury which occurs more than three months before the onset of symptoms is regarded with suspicion." Putnam stated:

> . . . There is something very mysterious about the occurrence of these lesions and their delayed relation to trauma. . . . If such clots were likely to follow trauma, one would expect to find them more often after fractures of the skull, and they would be a frequent postoperative complication of intracranial osteoplastic procedures (in which subdural clots are fairly rare).

He concluded:

> . . . It would appear, therefore, that in the disorder under consideration there must be some individual predisposition of the meninges favorable to the subdural seepage of blood.

From the citations it appears that one is justified in questioning the significance of minor blows to the head as a cause of spontaneous subdural hemorrhage unless a blood dyscrasia or an abnormality of the cerebral vasculature is proved.[25]

Publications limited to spontaneous subdural hemorrhage are rare. Occasional cases can be found by reviewing articles on traumatic or chronic subdural hematoma. Munro[26] mentioned an acute type in a 59 year old woman with a blood pressure of 220 systolic and 110 diastolic. The patient went swimming, complained of severe headache and fainted. When hospitalized ten days later she had paralysis of the left side of the body. For at least a year before the onset of the acute illness her systolic pressure was only 135. The patient died after a large clot had been removed from the right subdural space.

Laudig and associates,[16a] King[16b] and Voris[16c] have also described cases of acute subdural hematoma due to ruptured aneurysm. Acute subdural hemorrhages caused by thrombosis of cerebral veins or dural sinuses have been reported by Bailey and Hass,[11] Tischer[12] and Bucey and Lesemann.[13]

The latest report of cases of spontaneous subdural hemorrhage is that by Feld[27] in 1947 in the French literature. He collected 15 cases. The patients were 11 males and 4 females; 6 were between 15 and 30 years of age and 9 between 45 and 60 years. Fourteen of his patients were operated on; 9 recovered and 6 died. The blood pressure, the blood urea nitrogen and the bleeding and coagulation times were normal in all cases. He reported 2 cases of acute hemorrhage, due in one to the ingestion of an anthelmintic (male fern) and in the other to rupture of an aneurysm of the sylvian artery. He observed that spontaneous subdural hematomas are usually unilateral and occur over the surface of a hemisphere and never at the base or in the interhemispheric space. He described the membrane histologically as inflammatory tissue composed of zones rich in fibroblasts, newly formed capillaries and zones of lymphoplasmocytic infiltration. He found varices of the dura mater in 2 cases and expressed the belief that these anomalies situated along the course of the perforating dural veins are the most likely source of spontaneous subdural hemorrhage. The cause of the launching of the attack is incidental and may be intercurrent disease or trauma.

ETIOLOGIC CONSIDERATIONS IN SPONTANEOUS NONTRAUMATIC SUBDURAL HEMORRHAGE

1. Infection (Virchow 1857)
   - A. Acute
     1. Systemic
     2. Meningitis
     3. Exanthems (coughing)
     4. Thrombophlebitis of cerebral veins and dural venous sinuses
   - B. Chronic
     1. Syphilis
     2. *Tuberculosis*
2. Chronic alcoholism (vitamin deficiency?)
3. Avitaminosis
   - A. Ascorbic acid ("vitamin C")
   - B. Thiamine ("vitamin B," according to Suter[9])
4. Hemorrhagic diathesis
   - A. Blood dyscrasia
     1. Pernicious anemia
     2. Hemophilia
     3. Scurvy
     4. Purpura
5. Malformations of blood vessels
   - A. Aneurysms of cerebral arteries
   - B. Varices of cerebral and dural veins
6. Miscellaneous
   - A. Carcinomatosis and sarcomatosis of dura
   - B. Hemorrhage from brain tumor
   - C. Exogenous toxins
     1. Anthelmentic (male fern) (Feld[27])

REPORT OF CASES

Five cases of spontaneous subdural hemorrhage are reported from a series of 100 consecutive cases of subdural hematoma in which I have operated. Cases of subdural hygroma, as well as any case in which there was a suggestion of even trivial head trauma, were excluded from the series.

The cases could be divided into two clinical groups: Group 1: Acute subdural hemorrhage with the symptoms of a cerebrovascular accident. Group 2: Chronic subdural hemorrhage with the symptoms of a slowly expanding intracranial lesion.

Group 1: Spontaneous subdural hemorrhage with the symptoms of a cerebrovascular accident.

Case 1.—M., a white man aged 66, a clergyman, had intermittent headaches, vertigo and vomiting for several weeks, became irrational and was admitted to the medical service of Dr. J. C. Doane of the Jewish Hospital on June 21, 1948. His rectal temperature was 101 F.; pulse rate, 20; respiratory rate 32, and blood pressure, 160 systolic and 80 diastolic.

He had not previously had vascular hypertension, and his history disclosed no hemorrhage, head trauma or alcoholism.

He was stuporous and had nuchal rigidity. The left pupil was dilated, the right was small, and both did not react to light; the eyegrounds were normal. The patient showed decerebrate rigidity.

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[25] Putnam[3] and L. Jores (Ueber die Beziehungen primären subduraler Blutungen [illegible] haemorrhagica interna, Verhandl. d. deutsch. path. [illegible] expressed the belief that a traumatic hematom [illegible] from a spontaneous one by microscopic examination of the membrane. K. Inglis (Subdural Hemorrhage, Cysts, and False Membrane: Illustrating Influence of Intrinsic Factors in Disease When Development of Body Is Normal, Brain **69**: 157-194 [Sept.] 1946), R. G. Coblentz (Chronic Subdural Hematomas, Surgery, **4**: 194-210 [Aug.] 1938), Baker[5] and Kaump and Love[22] held that the slight difference observed microscopically did not warrant this etiologic distinction.

[26] Munro, D.: The Diagnosis and Treatment of Subdural Hematoma, New England J. Med. **210**: 1145-1160, 1934.

[27] Feld, M.: Contribution à l'étude des hématomes sous-duraux spontanés, Rev. neurol. **79**: 97-108, 1947.

The blood-tinged spinal fluid was under a pressure of 260 mm. of water. The red blood cell count and the hemoglobin content were normal. There were 17,500 white cells, of which 92 per cent were polymorphonuclears and 8 per cent lymphocytes. The thrombocyte count was 332,000. The urine contained albumin (1 plus) and 2 to 4 granular and hyaline cases per high power field. The bleeding and clotting times were 2 minutes. The blood urea nitrogen was 11 mg. per hundred cubic centimeters. The icterus index was 15 and the van den Bergh test for serum bilirubin showed 6.3 units. The total blood protein was 6.2 Gm. per hundred cubic centimeters. The Wassermann test of the blood was negative. A diagnosis was made of bilateral intracerebral hemorrhage, more on the left side, and the lifting of an osteoplastic flap on the left revealed a huge subdural clot. A fine stream of blood was seen pumping from a pinpoint opening in the left sylvian artery, and this was considered the source of the subdural hemorrhage. Examination of the artery did not reveal any aneurysm or obvious pathologic change. The bleeding was stopped with "gelfoam" pledgets. There was no evidence of any intracerebral bleeding. A burr opening over the right posterior frontal area showed no subdural hemorrhage.

The patient improved slightly, but forty-eight hours later he became moribund, with a rectal temperature of 107 F. The osteoplastic flap was reopened and a small extradural hemorrhage removed. The cerebrum was edematous. Cannulation showed no intracerebral bleeding, and a decompression was done. A burr opening was made over the right prefrontal area, and exploration showed no subdural or intracerebral hemorrhage.

The pathologist's report of the blood clot follows: "A large amount of blood clot, approximately 6 cm. in diameter, was examined. In one portion there appeared to be a membrane. Microscopic section showed blood clot with a little fibrin and a few polymorphonuclear leukocytes" (Dr. H. Ingelby).

The patient's stormy course with eventual convalescence included jacksonian convulsions, pulmonary atelectasis, pulmonary abscesses, persistent rectal bleeding of unknown cause and epididymitis. The scope of this paper does not permit a detailed description of the vigorous manner, tenacity and judgment with which Dr. Doane and his staff applied various life-saving therapeutic measures in combating these complications.

On discharge, November 2, five months after admission, the patient was out of bed. There was partial anomia with occasional jargon-like speech. Right homonymous hemianopsia was present, and there was excellent return of power in the right upper and lower extremities. There were slight spasticity and weakness of the left upper and lower extremities.

He returned to the hospital approximately three weeks later because of tingling and numbness in the left arm and leg. The blood pressure was 132 systolic and 90 diastolic. Speech had improved, and the decompressed area was soft. Right homonymous hemianopsia and partial left superior temporal anopsia were present. Slight paresis was still evident on the left, with hyperactive reflexes and a Babinski sign. There was no impairment of sensation. The right side had entirely recovered. The spinal fluid was blood tinged, and the pressure was 170 mm. of water. The blood coagulation time was 10 minutes and the prothrombin time 70 per cent of normal. It was thought that the patient had a slight subarachnoid hemorrhage over the right half of the cerebrum, but he recovered promptly.

In May 1949, approximately one year after the onset of his original symptoms, examination revealed progressive improvement in speech. The patient walked into the office with a slight limp. His blood pressure was 140 systolic and 90 diastolic. The neurologic examination showed no change.

Comment.—This patient had attacks of dizziness, occipital headaches and vomiting for a period of two weeks and then suddenly became irrational. On admission the spinal fluid was blood tinged and the neurologic examination showed involvement of both cerebral hemispheres, but more of the left. Operation revealed a massive subdural hemorrhage over the left cerebral hemisphere which appeared to have come from a pinpoint opening in the left sylvian artery. There was no history of vascular hypertension, and during hospitalization the blood pressure never rose above 120 systolic. There was no history of blood dyscrasia, although three sisters were said to be bleeders. The patient's bleeding and coagulation times were high normal. The resident remarked that there had been unusual oozing from the skin incision during exposure of the saphenous vein of the foot, and about eight days after the initial operation the patient had considerable hemorrhage of obscure origin from the lower bowel for a period of one week.

The white blood cell count of 17,500 cells with 92 per cent polymorphonuclears, the presence of a small amount of albumin and 2 to 3 granular and hyaline casts in the urine and the elevated rectal temperature of 101 F. suggested the possibility of some infectious process which had weakened the blood vessel wall. Periarteritis nodosa was also considered.

CASE 2.—Mrs. A. S., a white woman aged 51, was admitted to the medical service of Dr. Louis Soloff of the Temple University Hospital on Sept. 8, 1948. On September 1 the patient had fainted while washing clothes; she promptly recovered and had persistent headaches for seven days until the date of admission, when she became unconscious. The rectal temperature was 101 F.; the pulse rate, 70, and the respiratory rate, 28. The blood pressure was 148 systolic and 70 diastolic on admission but went as high as 194 systolic and 100 diastolic during her stay. The patient had been "hypertensive" for many years; there was no history of head trauma or alcoholism.

She was semistuporous and had nuchal rigidity. There were partial left hemiparesis and a bilateral Babinski sign. Petechiae were present on forehead and face.

The grossly bloody spinal fluid was under a pressure of 270 mm. of water. The red cell count and the hemoglobin content were normal. The white cell count was 19,050, with polymorphonuclears 84, lymphocytes 11 and monocytes 5 per cent. The urine contained albumin (slight trace) and sugar. The Wassermann test of the blood was negative. The bleeding time was 1 minute; the coagulation time, 3½ minutes. The sedimentation rate was 22 mm. in one hour; the blood urea nitrogen was 16 mg. per hundred cubic centimeters.

The roentgenograms of the skull revealed no abnormality. A preoperative diagnosis was made of spontaneous hemorrhage involving the right frontal lobe of the cerebrum. A right frontotemporal exploration was done thirteen days after the onset of the symptoms, and a large subdural clot was evacuated. The source of bleeding was not found. The cortical area representing the arm center appeared slightly full, but cannulation did not reveal intracerebral hemorrhage. A microscopic examination of the specimen was reported as revealing pure blood clot with no evidence of membrane (E. E. Aegerter).

There was considerable improvement in the hemiparesis, and the blood pressure was 150 systolic and 100 diastolic on discharge, September 30.

The patient was reexamined by Dr. Soloff in April 1949 (seven months after onset of symptoms). She was comfortable; her blood pressure was 160 systolic and 90 diastolic, and she had recovered the use of her left arm and leg with only slight residual spasticity. The fundi showed right optic atrophy of obscure cause.

Comment.—There was no history of blood dyscrasia. The patient was known to have high blood pressure. The only noteworthy laboratory findings were the marked elevation of the white cell count associated with fever and the increased sedimentation rate. Although these reactions could have been due to the subdural hemorrhage, it was also thought that some type of infection may have weakened a blood vessel wall, the hypertension being a precipitating factor.

Group 2: Spontaneous subdural hemorrhage associated with symptoms suggesting a slowly expanding intracranial lesion.

Case 1.—A. G., a white man aged 32, was admitted to the neurosurgical service at the Temple University Hospital May 24, 1942, complaining of right retro-orbital pain and vomiting of two weeks' duration. The temperature, the pulse rate and the respiratory rate were normal. The blood pressure was 130 systolic and 80 diastolic. There was slight bilateral sixth nerve weakness with bilateral choked disk of 1 to 2 diopters. There was marked left hemiparesis. The red blood cell count was 5,915,000. The hemoglobin content was 15 Gm. The white cell count was 14,350, with polymorphonuclears 77, lymphocytes 14, monocytes 7 and eosinophils 2 per cent. The thrombocyte count was 354,000. The coagulation time was 3½ minutes. The Rumpel-Leede test produced a moderate number of petechiae. The sedimentation rate was 20.5 mm. in one hour. The urinalysis gave entirely normal results. The spinal fluid pressure was 260 mm. of water, and the fluid was clear. The Wassermann tests of blood and spinal fluid were negative.

Roentgenograms of the skull revealed that the pineal gland was displaced slightly dorsad and caudad to the normal site; an encephalogram showed the lateral ventricles displaced to the left, and it was suspected that there was a brain tumor in the right frontal area.

On June 4 two burr openings were made in the right frontal and the parietal area, respectively. They revealed a capsule about 3 mm. thick and an underlying chocolate-colored liquid subdural hematoma, which was evacuated

The microscopic examination of the membrane was reported as follows: "Chronic granulation tissue with fibrosis; Infiltrating mononuclear inflammatory cells with recent and old hemorrhage, and new capillary proliferation" (E. E. Aegerter).

Recovery was uneventful. Questioning of patient and family revealed no history of head trauma or alcoholism, but the patient recalled that he had a persistent cold before the onset of his headaches. He said that he rarely drank orange or tomato juice, but there were no obvious signs of scurvy.

Examination six and a half years later showed complete recovery. His blood pressure was 132 systolic and 80 diastolic.

Comment.—A spontaneous subdural hemorrhage occurred in a young healthy man. There was no evidence of vascular hypertension, blood dyscrasia, trauma, syphilis or alcoholism. The only suggestion of infection was a "cold" at the onset of his illness and an elevation of the white cell count and the sedimentation rate on admission. However, the last two findings could have been a systemic reaction sequent to the subdural bleeding. Ascorbic acid deficiency was also considered.

Case 2.—T. T., a white man aged 60, was admitted to the neurologic service of Dr. Sherman Gilpin Jr., at the Temple University Hospital on Dec. 19, 1944. He was partially aphasic and had suffered from headaches and vomiting for five months, attributed to a heat stroke during the summer. There was no history of head trauma, alcoholism or hemorrhage. The rectal temperature was 99.8 F.; the pulse rate, 80; the respiratory rate 22. The blood pressure was 140 systolic and 90 diastolic.

The eyes were normal. There was right hemiparesis with a bilateral Babinski sign.

Cyanosis of the face, the lips and the nail beds of unknown cause had been present for three months. He had received sulfadiazine for two months before admission because of his "sinus condition." A blood sulfadiazine level taken on admission was 2 mg. per hundred cubic centimeters, and two spectrometer analyses showed traces of sulfmethemoglobin. A spinal puncture done elsewhere was recorded as having shown fluid under a pressure above 180 mm. of water and containing 78 cells, with no differential count being made.

The red cell count and the hemoglobin content were normal; there were 9,100 white cells, of which 83 per cent were polymorphonuclears, 12 lymphocytes and 5 monocytes. The urine, the blood urea nitrogen, the coagulation time, the prothrombin time and the ascorbic acid level were all normal. The thrombocyte count was 340,000, and 196,400 when repeated three days later. The Rumpell-Leede test produced no petechiae. The sedimentation rate was 20 mm. in one hour. The result of the Wassermann test of the blood was not reported. The icterus index was 6, and the van den Bergh test, direct, for serum bilirubin showed 0.25 mg. per hundred cubic centimeters.

Roentgenograms of the chest revealed no abnormality. A cardiac consultation gave no explanation for the cyanosis. Roentgenograms of the skull showed that the pineal gland had shifted 8 mm. to the right of the midline. A provisional diagnosis was made of tumor or abscess of the left temporofrontal lobe.

On December 22 a burr opening was made in the left frontal and parietal area. A subdural capsule, 3 mm. in thickness, was opened, and approximately 60 cc. of chocolate-colored liquid blood was removed. The patient improved for five days and then gradually became stuporous. A left frontoparietal osteoplastic flap was reflected twelve days after the first operation. An unusually vascular dura was exposed and was then peeled off the underlying greenish blue membrane of a massive subdural hematoma. After removal of the hematoma, an additional underlying hygroma was evacuated. The patient died eight days later. An autopsy showed a large extradural hemorrhage at the site of the surgical intervention. The source of the bleeding could not be found, but it was assumed that it came from a dural vessel. The autopsy gave no clue to the cause of the cyanosis or of the original subdural hematoma. There were no hemorrhagic lesions in any of the organs and no evidence of syphilis. The cause of death was postoperative extradural hemorrhage associated with multiple pulmonary abscesses and bronchopneumonia.

The microscopic examination of the membrane and clot removed at the first operation was reported as follows: "The clot is well organized in its peripheral and central portion. It is densely infiltrated by chronic inflammatory cells and by pigment-laden macrophages. There are endothelial and fibroblastic proliferation. Much calcification is seen throughout. Giant cells of the foreign body type are identified lining up around crystalline material. The dura is little changed from the normal except for fibrinous thickening. The subdural membrane is composed of edematous fibrous tissue showing fibrinoid regeneration, patchy calcification and scattered blood pigmentation. The endothelial lining cells are hyperplastic and form a fringelike substance. In one corner there is a massive necrotic debris. Occasional psammoma-like bodies are seen. Diagnosis: chronic organized subdural hematoma" (A. T. Peale).

Comment.—This patient had chronic headaches, which were attributed to a previous heat stroke and later to sinusitis. He also had undiagnosed cyanosis of face, lips and finger nails which antedated the use of a sulfonamide compound. Cardiac examination and autopsy offered no explanation for the cyanosis. There was no history of vascular hypertension, bleeding diathesis, alcoholism or head trauma. Although the extradural hemorrhage was attributed to the surgical intervention, the same factors which produced the subdural bleeding may have contributed to its occurrence.

Case 3.—C. W., a white man aged 59, was referred to the neurosurgical service of Dr. J. E. Gotwals April 27, 1945. The patient complained that he had suffered from vomiting and right supraorbital headaches for one month. The temperature and the pulse and respiratory rates were normal. The systolic blood pressure readings varied between 132 and 140. There was no history of head trauma or alcoholism. Four years previously the patient had urinary retention and hematuria. This improved, but recently he had noticed urinary frequency and incontinence. The neurologic examination revealed nothing except for increase of the left deep tendon reflexes.

The spinal fluid was normal except that the Wassermann reaction was weakly positive on two occasions. The Wassermann test of the blood was negative. The complete blood count was normal. The urine showed a trace of albumin and 50 to 60 red blood cells per high power field but no casts. The blood urea nitrogen was 15.6 Gm. per hundred cubic centimeters. The bleeding, coagulation and prothrombin times and the blood level of ascorbic acid were normal. The thrombocyte count was 301,700. The sedimentation rate was 18 mm. in one hour.

Roentgenograms of the chest showed healed, obsolete tuberculosis. Retrograde pyelography and intravenous urography revealed advanced involvement of the right kidney. A Mantoux test was moderately positive. Roentgenograms of the skull revealed that the pineal gland had shifted 4 mm. to the left of the midline. A provisional diagnosis was made of tumor of the right frontal lobe possibly metastatic from the kidney. Exploratory craniotomy was done on the right side, May 7, and a liquid and solid subdural hematoma was evacuated. A bleeding vein was found in the premotor area. Whether it was the original source of the subdural hemorrhage was impossible to decide, since it could have been torn during the removal of clot. The cortex in the region of this vessel appeared somewhat full, but a subcortical incision showed no evidence of tumor. The patient's convalescence was uneventful. The microscopic appearance of the hematoma was described as follows: "The tissue consists of a large blood clot surrounded by a relatively cellular fibrous tissue membrane. In some areas this membrane has a pronounced lining of cells that appear to be endothelial in origin. Beginning organization of the clot is visible. Diagnosis: organizing hematoma with no evidence of tumor tissue."

The patient was discharged on May 21. He refused any treatment of the suspected lesion of the kidney. Three years later examination showed no return of cerebral symptoms.

Comment.—This patient presented right frontal headaches of five weeks' duration associated with vomiting. There was no history of head trauma, alcoholism, blood dyscrasia or vascular hypertension. Although the Wassermann reaction of the spinal fluid was slightly positive on two occasions, the Wassermann reaction of the blood was negative, and there was no history of any previous syphilitic infection. There was a history of past hematuria, and tuberculosis or tumor of the right kidney was suspected but not demonstrated. There was no evidence of any intracerebral tuberculosis or neoplasm.

RÉSUMÉ

The etiologic factors of spontaneous subdural hemorrhage are reviewed. A classification of the causes of this type of hemorrhage is presented. The etiologic significance of trivial head trauma is discussed.

Five cases of spontaneous subdural hemorrhage are reported. The patients were 4 men and 1 woman. The youngest (a man) was 32 years of age, and the remainder were from 51 to 66 years of age. The hematoma was unilateral in all. The symptoms were acute in 2 and chronic in 3. One patient died from postoperative extradural hemorrhage, which possibly was of the same cause as the original subdural hemorrhage. The remaining 4 recovered.

Although the site of hemorrhage was found in only 1 case (a pinpoint opening in the sylvian artery) and the cause demonstrated in none, the following facts may be of clinical interest:

1. Only 1 patient had vascular hypertension. None had a history of alcoholism.
2. There was debatable evidence of syphilis in 1 case; in the remainder the Wassermann reactions were negative.
3. The coagulation time was normal in all cases, and the bleeding time was normal in 4 cases in which it was observed.
4. Low intake of ascorbic acid was admitted in 1 case.
5. The white blood cell count was elevated in 3 cases.
6. The sedimentation rate was elevated (average, 20 mm. in one hour) in the 4 cases in which it was determined. In none was there anemia. The rectal temperature was normal in 3 cases. The white blood cell count was normal in 2 and elevated in 2.

CONCLUSIONS

1. Spontaneous nontraumatic hemorrhage was found in 5 of 100 consecutive patients operated on for subdural hemorrhage.

2. Spontaneous nontraumatic subdural hemorrhage may occur in two clinical forms: (1) acute, with symptoms of cerebrovascular accident; (2) chronic, with symptoms of a slowly expanding intracranial lesion.

3. The source of the bleeding is rarely detected at operation or on inspection of the gross specimen. It may be a bridging vein on the way to a dural venous sinus, a perforating dural vein or a dural venous varix. In 1 patient in this series the bleeding was from a pinpoint opening in the sylvian artery.

4. The etiologic factors of the pathologic change involving the blood vessel are usually obscure. Infection, vitamin deficiency, alcoholism, syphilis, have all been accused but rarely proved to be etiologic.

5. The role of trivial head trauma as a cause of subdural hematoma has been given undue prominence in the literature. It is rarely a direct cause of the hemorrhage but may be a precipitating cause if previous anatomic abnormality or disease of the cerebral vasculature exists.

6. The causation of spontaneous subdural hemorrhage could be more accurately established if the following were carefully investigated: (1) the history, by means of a comprehensive routine questionnaire; (2) the results of the physical examination and laboratory tests for evidence of blood dyscrasia, avitaminosis, infection or abnormal vasculature; (3) the operative area for abnormality of vasculature, and (4) the membrane and clot for histologic and bacteriologic evidence of infection.

225 South Seventeenth Street.

ABSTRACT OF DISCUSSION

Dr. Rudolph Jaeger, Philadelphia: Dr. Scott has undertaken the difficult task of attempting to prove, from the literature and his own experience, the nontraumatic origin of subdural hematoma. The difficulty is evident from the fact that, after a detailed critical analysis of 100 consecutive cases of subdural hematoma, he found only 5 that fitted the clinical criteria of spontaneous subdural hematoma, and in only 1 of the 5 did he find any pathologic factor that might have a definite bearing on the cause of the hemorrhage. In one instance the patient had hypertensive disease and a discernible point of arterial rupture. No one can deny that spontaneous hemorrhage occurs from friable arteries, as can be readily observed in hemorrhages of the retinal vessels. I have also uncovered a spurting arterial rupture after wiping away a large clot from a sylvian artery in a case of vascular hypertension. This paper emphasizes the fact that subdural hematoma may be caused by many factors other than extracranial trauma. However, it must be admitted that spontaneous subdural hematoma is comparatively rare and that no clear clinical picture has been presented to differentiate the nontraumatic from the traumatic type. Absence of a history of trauma certainly does not preclude the possibility of a hematoma of traumatic origin. If subdural hematoma may be inflammatory in origin, why is it that no one has ever described definite organization between the dura and the capsule of the hematoma or adherence of the capsule and the arachnoid? While the dura is always adherent to the outer aspect of the capsule, I have never found that it could not be readily stripped from the underlying hematoma. I described the first 2 cases of subdural hematoma I reported (1930) as cases of "pachymeningitis hemorrhagica interna," as did Hassin prior to that, because the more appropriate terminology of subdural hematoma had not then come into vogue. In one of my cases the hematoma might well have been considered of inflammatory origin, since it was a necropsy specimen without history. In the second one, however, its traumatic origin was proved beyond a shadow of a doubt, as there had been a violent blow on the head causing a fracture of the skull. The occurrence of the multilaminate subdural hematoma is most difficult to explain on a traumatic basis. The mechanics of its formation may be explained by the enlargement of the hematoma from the absorption of cerebrospinal fluid, tearing small vessels in the dural-arachnoid trabeculations, thereby setting up other hemorrhagic layers under the initial hematoma. Thus, additional hemorrhages occur in the subdural space precisely as they do in extradural hemorrhage, but at a much slower rate.

Dr. H. C. Voris, Chicago: Three years ago, before this section in San Francisco, I reported a series of 100 consecutive cases of subdural hemorrhage, and in that group I had only [illegible] cases in which there was no history of significant trauma. [illegible]. Scott's group, in his series of 100 cases, is only slightly [illegible]rger. There is no doubt that contributing factors are present even with *trauma, such as vascular anomalies and* tumors. My series contained examples of that. I think that Dr. Scott is a little dogmatic in his dismissal of apparently trivial trauma to the head as a possible cause of subdural hematoma. Those of you who have seen the now famous motion picture Drs. Sheldon, Pudenz and Restarski prepared a few years ago could not fail to be impressed by the movements of the brain under the lucite calvarium when the monkey was subjected to subconcussive trauma. Such movements of the brain can, I am sure, rupture short bridging veins, or anomalous bridging veins between brain and dura, and thus produce subdural hemorrhage, even though the trauma itself may seem to be insignificant.

Although there is no way of proving it, I am convinced that in some of these cases in which one does not have a history of significant trauma the patient did have an injury and either has forgotten it or is unable to recall it. All have had the experience of operating on a patient in the absence of a history suggestive of subdural hemorrhage and then, later, having the family or the patient himself recollect significant trauma. However, *Dr. Scott's presentation* is of great value because it teaches again that one must not fail to consider the possibility of subdural hemorrhage even though there is not a history of significant trauma.

Dr. Michael Scott, Philadelphia: Time does not permit, for example, including such cases as that of a patient who, while in the ocean, was *struck* on the head by a wave and five months later had headaches and then subdural hematoma. That patient was excluded from this series becaus

of trauma. The correlating of trauma to symp

quently difficult in some of these cases. On the

my associates and I believe that minimal trauma

factor if there is an associated abnormality of th

vasculature.

Clinical Notes, Suggestions and New Instruments

TRAUMATIC AMENORRHEA WITH DYSMENORRHEA

JACOB MEZER, M.D.
Boston

Severe dysmenorrhea without menstrual flow is an unusual sequel to uterine curettage. It begins on the first anticipated menstrual day following curettage and may recur at monthly intervals until treatment is successful. When this condition results from obstruction of the cervical canal due to traumatic stricture with hematometra, the problem is a mechanical one requiring reestablishment of patency of the canal. This report concerns 2 patients with a similar syndrome (amenorrhea with dysmenorrhea) in which there was no obstruction in the cervical canal and in which the problem was of a different nature.

REPORT OF CASES

Case 1.—A woman aged 37, the mother of three children, complained of two attacks of severe abdominal pain without menstrual flow recurring at monthly intervals following a therapeutic abortion by dilatation and curettage at seven weeks' gestation. Two years before, dilatation and curettage had been done for menstrual irregularity. There was no previous history of dysmenorrhea. During her third attack, examination showed diffuse abdominal tenderness and an extremely tender but not contracted uterus. The patient was confined to bed for a week because of pain, which opiates relieved only slightly. Two days later the uterus was no longer tender, and a uterine sound was passed easily without encountering any obstruction or tapping a hematometra. Hysterosalpingography disclosed only slight irregularity of outline of the uterine cavity. Seventeen days later a fourth attack occurred, concurrent with the end of a biphasic basal body temperature curve. The cause of the amenorrhea was not established. Because of the remote, though unlikely, possibility of failure of endometrial regeneration, 3.75 mg. of sodium estrone sulfate were given daily for four days starting at the onset of her pain. The next ovulation was delayed by four days. Six days after ovulation endometrial tissue was removed for biopsy, which showed a secretory phase of twenty days' development. At this time, because her molimina were distressing, the estrogen therapy was repeated. Eight days after removal of tissue for biopsy, a normal flow appeared without discomfort. Thereafter, full painless flow recurred regularly.

Case 2.—A housewife aged 35 had a curettage and intrauterine packing for an incomplete miscarriage at ten weeks' gestation. Dilation of the cervix had not been necessary, because the cervix was patulous, tissue having been passed. Eight years before, dilatation and curettage were performed for metrorrhagia; and five years before, an incomplete miscarriage at three and one-half months' gestation was completed by dilatation, curettage and intrauterine packing. There had never been any dysmenorrhea. One month after her recent miscarriage her molimen was associated with severe colicky low abdominal pain of eighteen hours' duration. There was no menstrual flow. One month later this episode recurred. During the second half of her third cycle, she was given 2.5 mg. of *sodium estrone sulfate daily for six days.* The third attack of pain recurred concurrent with the end of a typical biphasic basal body temperature curve. In the hope of preventing a fourth attack of pain by suppressing ovulation, she was given 3.75 mg. of sodium estrone sulfate for twenty-five days, starting the first day of her fourth cycle. On the seventh day of this cycle an unsuccessful attempt at uterine sounding was made elsewhere. *The basal body temperature curve this month was* atypical, consistent with inhibition of ovulation. Seven days

last dose of estrogen, a pink-tinged discharge was

days. There was no pain. Three days later

too sensitive to allow manipulation. Eleven days

cervix was sounded with the patient under

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gynecologic pathology, Beth Israel Hospital.

anesthesia. There was no obstruction or hematometra. An endometrial biopsy showed a secretory response of twenty-five days' development. Three days later the patient began a normal, full, painless menstrual flow, with resumption thereafter of her usual cycle.

COMMENT

Stamer[1] reviewed 37 cases from the literature since 1892 and added 24 of his own. He classified them as follows: (1) complete atresia without ovulation, pain or bleeding; (2) incomplete atresia with ovulation, pain and internal bleeding resulting in hematometra, and (3) incomplete atresia with ovulation and pain but without bleeding either internally or externally. When hematometra was present, the passage of a probe or uterine sound relieved stenosis at the internal os and allowed drainage of old blood, with recovery. In incomplete atresia without bleeding, simple sounding or dilation of the cervical canal was equally effective in relieving amenorrhea and periodic dysmenorrhea, whether it had prevailed for a few months or years. Biopsies of endometrial tissue removed at the onset of menstrual flow following probing after ovulation showed a secretory response. Endocrine therapy was used in cases of anovulatory flow. Stamer expressed his belief that the syndrome is due to varying degrees of atrasia following trauma to the endometrium, especially at the internal os.

Asherman,[2] who studied 29 patients with the same syndrome as that observed in my patients, found stenosis varying from slight narrowing to complete occlusion but could not correlate the degree of stenosis with the severity of symptoms. The syndrome developed after such procedures as manual removal of the placenta, intrauterine packing, curettage performed for abortion, postpartum bleeding or hydatidiform mole; also, after repeated curettage for other reasons. In all but 2 patients, relief of stenosis by the simple passage of a sound or dilators facilitated the return of normal menstruation four weeks after the last menstrual pains, concurrent with the end of the biphasic basal body temperature curve. When the biopsy specimen was taken immediately after breaking through the atresia, cyclic phenomena could not be observed, the endometrium remaining in a "state of inactivity." Since there was no hematometra or inhibition of the hormonal cycle, he concluded that the syndrome was due not to narrowing of the internal os but to failure of the endometrium to respond to endocrine sitmulation and that the inactive endometrium could be caused to respond by local mechanical probing.

Asherman's postulate of failure of endometrial regeneration, however, is in contradiction with the observations of Stamer and the evidence in the cases reported herein that a secretory endometrium is present in these patients. Moreover, a state of inactivity is not likely on the basis of other evidence. After normal menstruation the endometrium is restored with great rapidity. Rutherford and Mezer[3] found that endometrial regeneration promptly ensued after full term pregnancy whether or not ovulation was inhibited by lactation. After spontaneous abortion, regeneration may be complete within seven days, even if followed by curettage and even if ovulation is delayed by retention of placental and decidual tissue.

Although the dysmenorrhea in this syndrome may be related to ovulation[4] in my patients, the fact that it is intimately associated with amenorrhea, suggests that some other mechanism is responsible. It is possible that the trauma of curettage sometimes disturbs the process of endometrial disintegration at the end of the hormonal cycle and that sounding or removal of tissue for biopsy, or both, reestablish the normal mechanism involved. The association of dysmenorrhea with amenorrhea would suggest that abolition of either symptom must be followed by abolition of the other. Perhaps more information on this mysterious condition might be obtained by removal of endometrial tissue for biopsy at the onset of the attack of severe pain. Histologic study of such tissue may be of value in elucidating the mechanism of essential dysmenorrhea.

SUMMARY

1. Traumatic amenorrhea and dysmenorrhea is an unusual and trying sequel to uterine curettage.
2. Various theories as to causation are discussed.
3. Relief of the severe pain may be afforded by the inhibition of ovulation with the use of estrogens.
4. Recovery may follow removal of endometrial tissue for biopsy. This suggests that endometrial tissue be taken at the onset of severe pain.

171 Bay State Road (15).

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[1] Stamer, S.: Partial and Total Atresia of the Uterus after Excochleation, Acta obst. et gynec. Scandinav. **26**: 263-297, 1946.

[2] Asherman, G. S.: Amenorrhoea Traumatica (Atretica), J. Obst. & Gynaec. **55**:23-30, 1948.

[3] Rutherford, R. N., and Mezer, J.: Regeneration of Uterine Mucosa after Spontaneous Abortion and Normal Delivery, J. A. M. A. **119**: 124-128 (May 9) 1942.

[4] Sturgis, S. H., and Albright, F.: The Mechanism of Estrin Therapy in the Relief of Dysmenorrhea, Endocrinology **26**: 68, 1940.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M. D., *Secretary.*

AMINOPHYLLINE-U. S. P. (See New and Nonofficial Remedies 1949, p. 322).

The following dosage forms have been accepted:

AMERICAN PHARMACEUTICAL CO., NEW YORK 18

Tablets Aminophylline: 0.1 Gm. enteric coated.

ERNEST BISCHOFF COMPANY, INC., IVORYTON, CONN.

Suppositories Aminophylline: 0.5 Gm.

WYETH, INCORPORATED, PHILADELPHIA 3

Suppositories Aminophylline: 0.25 Gm.

DICUMAROL (See New and Nonofficial Remedies 1949, p. 347).

The following dosage form has been accepted:

THE UPJOHN COMPANY, KALAMAZOO 99, MICH.

Tablets Dicumarol: 100 mg.

DIGITOXIN-U. S. P. (See New and Nonofficial Remedies 1949, p. 267).

The following dosage form has been accepted:

CHICAGO PHARMACAL COMPANY, CHICAGO

Tablets Digitoxin: 0.2 mg.

EPHEDRINE SULFATE-U. S. P. (See New and Nonofficial Remedies 1949, p. 231).

The following dosage form has been accepted:

THE VALE CHEMICAL COMPANY, INC., ALLENTOWN, PA.

Tablets Ephedrine Sulfate: 24 mg.

ESTRONE-U. S. P. (See New and Nonofficial Remedies 1949, p. 366).

The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Aqueous Suspension Estrone: 2 mg. (20,000 I. U.) per cc. in 10 cc. vials; 5 mg. (50,000 I. U.) per cc. in 5 cc. vials. Preserved with 0.9 per cent benzyl alcohol.

FOLIC ACID (See New and Nonofficial Remedies 1949, p. 559).

The following dosage form has been accepted:

THE UPJOHN COMPANY, KALAMAZOO 99, MICH.

Tablets Folic Acid: 5 mg.

HOMATROPINE METHYLBROMIDE-N. F. (See New and Nonofficial Remedies 1949, p. 258).

The following dosage form has been accepted:

ENDO PRODUCTS, INC., RICHMOND HILL 18, N. Y.

Elixir Mesopin: 0.5 mg. per cc. in 118.3 cc., 473 cc. and 3.78 liter bottles.

large clot from a sylvian artery in a case of vascular hypertension. This paper emphasizes the fact that subdural hematoma may be caused by many factors other than extracranial trauma. However, it must be admitted that spontaneous subdural hematoma is comparatively rare and that no clear clinical picture has been presented to differentiate the nontraumatic from the traumatic type. Absence of a history of trauma certainly does not preclude the possibility of a hematoma of traumatic origin. If subdural hematoma may be inflammatory in origin, why is it that no one has ever described definite organization between the dura and the capsule of the hematoma or adherence of the capsule and the arachnoid? While the dura is always adherent to the outer aspect of the capsule, I have never found that it could not be readily stripped from the underlying hematoma. I described the first 2 cases of subdural hematoma I reported (1930) as cases of "pachymeningitis hemorrhagica interna," as did Hassin prior to that, because the more appropriate terminology of subdural hematoma had not then come into vogue. In one of my cases the hematoma might well have been considered of inflammatory origin, since it was a necropsy specimen without history. In the second one, however, its traumatic origin was proved beyond a shadow of a doubt, as there had been a violent blow on the head causing a fracture of the skull. The occurrence of the multilaminate subdural hematoma is most difficult to explain on a traumatic basis. The mechanics of its formation may be explained by the enlargement of the hematoma from the absorption of cerebrospinal fluid, tearing small vessels in the dural-arachnoid trabeculations, thereby setting up other hemorrhagic layers under the initial hematoma. Thus, additional hemorrhages occur in the subdural space precisely as they do in extradural hemorrhage, but at a much slower rate.

Dr. H. C. Voris, Chicago: Three years ago, before this section in San Francisco, I reported a series of 100 consecutive cases of subdural hemorrhage, and in that group I had only 3 cases in which there was no history of significant trauma. Dr. Scott's group, in his series of 100 cases, is only slightly larger. There is no doubt that contributing factors are present even with trauma, such as vascular anomalies and tumors. My series contained examples of that. I think that Dr. Scott is a little dogmatic in his dismissal of apparently trivial trauma to the head as a possible cause of subdural hematoma. Those of you who have seen the now famous motion picture Drs. Sheldon, Pudenz and Restarski prepared a few years ago could not fail to be impressed by the movements of the brain under the lucite calvarium when the monkey was subjected to subconcussive trauma. Such movements of the brain can, I am sure, rupture short bridging veins, or anomalous bridging veins between brain and dura, and thus produce subdural hemorrhage, even though the trauma itself may seem to be insignificant.

Although there is no way of proving it, I am convinced that in some of these cases in which one does not have a history of significant trauma the patient did have an injury and either has forgotten it or is unable to recall it. All have had the experience of operating on a patient in the absence of a history suggestive of subdural hemorrhage and then, later, having the family or the patient himself recollect significant trauma. However, Dr. Scott's presentation is of great value because it teaches again that one must not fail to consider the possibility of subdural hemorrhage even though there is not a history of significant trauma.

Dr. Michael Scott, Philadelphia: Time does not permit, for example, including such cases as that of a patient who, while in the ocean, was struck on the head by a wave and five months later had headaches and then subdural hematoma. That patient was excluded from this series because of a history of trauma. The correlating of trauma to symptoms is frequently difficult in some of these cases. On the other hand, my associates and I believe that minimal trauma may be a factor if there is an associated abnormality of the cerebral vasculature.

Clinical Notes, Suggestions and New Instruments

TRAUMATIC AMENORRHEA WITH DYSMENORRHEA

JACOB MEZER, M.D.
Boston

Severe dysmenorrhea without menstrual flow is an unusual sequel to uterine curettage. It begins on the first anticipated menstrual day following curettage and may recur at monthly intervals until treatment is successful. When this condition results from obstruction of the cervical canal due to traumatic stricture with hematometra, the problem is a mechanical one requiring reestablishment of patency of the canal. This report concerns 2 patients with a similar syndrome (amenorrhea with dysmenorrhea) in which there was no obstruction in the cervical canal and in which the problem was of a different nature.

REPORT OF CASES

Case 1.—A woman aged 37, the mother of three children, complained of two attacks of severe abdominal pain without menstrual flow recurring at monthly intervals following a therapeutic abortion by dilatation and curettage at seven weeks' gestation. Two years before, dilatation and curettage had been done for menstrual irregularity. There was no previous history of dysmenorrhea. During her third attack, examination showed diffuse abdominal tenderness and an extremely tender but not contracted uterus. The patient was confined to bed for a week because of pain, which opiates relieved only slightly. Two days later the uterus was no longer tender, and a uterine sound was passed easily without encountering any obstruction or tapping a hematometra. Hysterosalpingography disclosed only slight irregularity of outline of the uterine cavity. Seventeen days later a fourth attack occurred, concurrent with the end of a biphasic basal body temperature curve. The cause of the amenorrhea was not established. Because of the remote, though unlikely, possibility of failure of endometrial regeneration, 3.75 mg. of sodium estrone sulfate were given daily for four days starting at the onset of her pain. The next ovulation was delayed by four days. Six days after ovulation endometrial tissue was removed for biopsy, which showed a secretory phase of twenty days' development. At this time, because her molimina were distressing, the estrogen therapy was repeated. Eight days after removal of tissue for biopsy, a normal flow appeared without discomfort. Thereafter, full painless flow recurred regularly.

Case 2.—A housewife aged 35 had a curettage and intrauterine packing for an incomplete miscarriage at ten weeks' gestation. Dilation of the cervix had not been necessary, because the cervix was patulous, tissue having been passed. Eight years before, dilatation and curettage were performed for metrorrhagia; and five years before, an incomplete miscarriage at three and one-half months' gestation was completed by dilatation, curettage and intrauterine packing. There had never been any dysmenorrhea. One month after her recent miscarriage her molimen was associated with severe colicky low abdominal pain of eighteen hours' duration. There was no menstrual flow. One month later this episode recurred. During the second half of her third cycle, she was given 2.5 mg. of sodium estrone sulfate daily for six days. The third attack of pain recurred concurrent with the end of a typical biphasic basal body temperature curve. In the hope of preventing a fourth attack of pain by suppressing ovulation, she was given 3.75 mg. of sodium estrone sulfate for twenty-five days, starting the first day of her fourth cycle. On the seventh day of this cycle an unsuccessful attempt at uterine sounding was made elsewhere. The basal body temperature curve this month was atypical, consistent with inhibition of ovulation. Seven days after the last dose of estrogen, a pink-tinged discharge was noted for two days. There was no pain. Three days later the cervix was too sensitive to allow manipulation. Eleven days after ovulation the cervix was sounded with the patient under

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Assistant in gynecology and gynecologic pathology, Beth Israel Hospital.

anesthesia. There was no obstruction or hematometra. An endometrial biopsy showed a secretory response of twenty-five days' development. Three days later the patient began a normal, full, painless menstrual flow, with resumption thereafter of her usual cycle.

COMMENT

Stamer[1] reviewed 37 cases from the literature since 1892 and added 24 of his own. He classified them as follows: (1) complete atresia without ovulation, pain or bleeding; (2) incomplete atresia with ovulation, pain and internal bleeding resulting in hematometra, and (3) incomplete atresia with ovulation and pain but without bleeding either internally or externally. When hematometra was present, the passage of a probe or uterine sound relieved stenosis at the internal os and allowed drainage of old blood, with recovery. In incomplete atresia without bleeding, simple sounding or dilation of the cervical canal was equally effective in relieving amenorrhea and periodic dysmenorrhea, whether it had prevailed for a few months or years. Biopsies of endometrial tissue removed at the onset of menstrual flow following probing after ovulation showed a secretory response. Endocrine therapy was used in cases of anovulatory flow. Stamer expressed his belief that the syndrome is due to varying degrees of atrasia following trauma to the endometrium, especially at the internal os.

Asherman,[2] who studied 29 patients with the same syndrome as that observed in my patients, found stenosis varying from slight narrowing to complete occlusion but could not correlate the degree of stenosis with the severity of symptoms. The syndrome developed after such procedures as manual removal of the placenta, intrauterine packing, curettage performed for abortion, postpartum bleeding or hydatidiform mole; also, after repeated curettage for other reasons. In all but 2 patients, relief of stenosis by the simple passage of a sound or dilators facilitated the return of normal menstruation four weeks after the last menstrual pains, concurrent with the end of the biphasic basal body temperature curve. When the biopsy specimen was taken immediately after breaking through the atresia, cyclic phenomena could not be observed, the endometrium remaining in a "state of inactivity." Since there was no hematometra or inhibition of the hormonal cycle, he concluded that the syndrome was due not to narrowing of the internal os but to failure of the endometrium to respond to endocrine sitmulation and that the inactive endometrium could be caused to respond by local mechanical probing.

Asherman's postulate of failure of endometrial regeneration, however, is in contradiction with the observations of Stamer and the evidence in the cases reported herein that a secretory endometrium is present in these patients. Moreover, a state of inactivity is not likely on the basis of other evidence. After normal menstruation the endometrium is restored with great rapidity. Rutherford and Mezer[3] found that endometrial regeneration promptly ensued after full term pregnancy whether or not ovulation was inhibited by lactation. After spontaneous abortion, regeneration may be complete within seven days, even if followed by curettage and even if ovulation is delayed by retention of placental and decidual tissue.

Although the dysmenorrhea in this syndrome may be related to ovulation[4] in my patients, the fact that it is intimately associated with amenorrhea, suggests that some other mechanism is responsible. It is possible that the trauma of curettage sometimes disturbs the process of endometrial disintegration at the end of the hormonal cycle and that sounding or removal of tissue for biopsy, or both, reestablish the normal mechanism involved. The association of dysmenorrhea with amenorrhea would suggest that abolition of either symptom must be followed by abolition of the other. Perhaps more information on this mysterious condition might be obtained by removal of endometrial tissue for biopsy at the onset of the attack of severe pain. Histologic study of such tissue may be of value in elucidating the mechanism of essential dysmenorrhea.

SUMMARY

1. Traumatic amenorrhea and dysmenorrhea is an unusual and trying sequel to uterine curettage.
2. Various theories as to causation are discussed.
3. Relief of the severe pain may be afforded by the inhibition of ovulation with the use of estrogens.
4. Recovery may follow removal of endometrial tissue for biopsy. This suggests that endometrial tissue be taken at the onset of severe pain.

171 Bay State Road (15).

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[3] Rutherford, R. N., and Mezer, J.: Regeneration of Uterine Mucosa after Spontaneous Abortion and Normal Delivery, J. A. M. A. **119:** 124-128 (May 9) 1942.

[4] Sturgis, S. H., and Albright, F.: The Mechanism of Estrin Therapy in the Relief of Dysmenorrhea, Endocrinology **26:** 68, 1940.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M. D., *Secretary.*

AMINOPHYLLINE-U. S. P. (See New and Nonofficial Remedies 1949, p. 322).

The following dosage forms have been accepted:

American Pharmaceutical Co., New York 18

Tablets Aminophylline: 0.1 Gm. enteric coated.

Ernest Bischoff Company, Inc., Ivoryton, Conn.

Suppositories Aminophylline: 0.5 Gm.

Wyeth, Incorporated, Philadelphia 3

Suppositories Aminophylline: 0.25 Gm.

DICUMAROL (See New and Nonofficial Remedies 1949, p. 347).

The following dosage form has been accepted:

The Upjohn Company, Kalamazoo 99, Mich.

Tablets Dicumarol: 100 mg.

DIGITOXIN-U. S. P. (See New and Nonofficial Remedies 1949, p. 267).

The following dosage form has been accepted:

Chicago Pharmacal Company, Chicago

Tablets Digitoxin: 0.2 mg.

EPHEDRINE SULFATE-U. S. P. (See New and Nonofficial Remedies 1949, p. 231).

The following dosage form has been accepted:

The Vale Chemical Company, Inc., Allentown, Pa.

Tablets Ephedrine Sulfate: 24 mg.

ESTRONE-U. S. P. (See New and Nonofficial Remedies 1949, p. 366).

The following dosage form has been accepted:

Abbott Laboratories, North Chicago, Ill.

Aqueous Suspension Estrone: 2 mg. (20,000 I. U.) per cc. in 10 cc. vials; 5 mg. (50,000 I. U.) per cc. in 5 cc. vials. Preserved with 0.9 per cent benzyl alcohol.

FOLIC ACID (See New and Nonofficial Remedies 1949, p. 559).

The following dosage form has been accepted:

The Upjohn Company, Kalamazoo 99, Mich.

Tablets Folic Acid: 5 mg.

HOMATROPINE METHYLBROMIDE-N. F. (See New and Nonofficial Remedies 1949, p. 258).

The following dosage form has been accepted:

Endo Products, Inc., Richmond Hill 18, N. Y.

Elixir Mesopin: 0.5 mg. per cc. in 118.3 cc., 473 cc. and 3.73 liter bottles.

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SATURDAY, OCTOBER 29, 1949

SURGICAL TREATMENT OF FOCAL EPILEPSY

Horsley, in 1909, described a method of excision of an area of motor cortex for the relief of athetoid and convulsive movements of an upper extremity. Sachs, in 1935, reported observations on 11 patients on whom "The Horsley Operation" was performed. There were 9 patients cured, 1 death and 1 recurrence in these 11 cases of Jacksonian epilepsy. Furlow,[1] in 1938, reported on 16 more patients from the same clinic with 2 deaths, a cure in 7 instances, improvement in 6 and no change in 1. Penfield and Erickson[2] published in 1941 an analysis of all patients who had cortical excision carried out during a ten year period, 1929-1939. One hundred and fifteen of these patients were followed from one to eleven years; 43 per cent were free from seizures or had one or two attacks; 26 per cent considered themselves 50 per cent improved; 9 per cent were slightly helped, and 22 per cent were not improved.

Cerebral seizures, as differentiated from essential epilepsy, may be caused by a variety of focal lesions, such as meningocerebral scar, local cortical atrophy, local microgyria, expanding lesions, such as brain tumor or cerebral abscess, cysts and other abnormalities. All of these factors, Penfield emphasizes, have a common feature, which is the presence of a zone or area of ganglion cells in which the circulation has been interfered with to such an extent that the life of the cells is threatened. It is at some point in these peripheral and partially destroyed zones that the actual focus in which the epileptic discharge originates is to be found. Partial anoxemia, if not sufficient to destroy, produces in ganglion cells an abnormal state in which spontaneous neuronal activity is increased. This increase may be called the epileptogenic factor. Penfield stresses that, for surgical therapy to be effective, it is not sufficient to cut adhesions, to open a cyst or, in some cases, to remove a tumor. The epileptogenic focus in the marginal partly involved gyri must also be removed. Voris[3] reported a series of 24 patients with focal epilepsy on whom cortical excision was done. Of 20 patients followed for six to eight years, 2 have had no seizures since the operation, in 6 there rarely has been a seizure, 7 are improved and 5 are not significantly better. Cortical resection produced improvement in 8 of 11 patients, as compared with similar results in 15 of 20 patients in the entire series.

In an analysis of 76 patients operated on during the six year period, 1939 to 1944, Penfield and Steelman[4] report 1 fatality which was caused by an infected extradural hematoma and meningitis. Of the 75 patients followed, cortical excision was performed in 59 and craniotomy without excision in 16. Of the 59 patients who had a cortical excision, 15 were completely free of seizures, 18 were almost completely free, 8 were 50 per cent improved, 7 were only slightly improved and 11 felt that they had derived no benefit from the operation. In 41 per cent of the patients the physical and neurologic examination pointed to a local lesion.

Roentgenography is valuable in the diagnosis of a local lesion by revealing asymmetry of the skull or cranial hemiatrophy which is strongly suggestive of birth injury. Pneumoencephalography may yield some evidence of local cerebral atrophy. Electroencephalography was practiced in all of Penfield's cases and was found to be valuable in identifying the location of epileptogenic discharge in a high proportion of cases of focal epilepsy. The activity of the focus may be increased by hydration, hyperventilation or use of metrazol® (pentylenetetrazol). Useful as it is, one cannot rely entirely on the electrographic report alone. Penfield stresses that in the 16 craniotomies without excision performed by him there was not a single successful case. The cause of the original lesion in his series was most often head injury, second, birth injuries and, third, local infection. The cause was unknown in 12 per cent of the excisions and in 62 per cent of the negative explorations. The best guide to localization of an epileptogenic zone is the seizure pattern. The greatest supplementary help a surgeon can receive is an electrographic study by an expert.

In a recent publication Penfield[5] emphasizes that a focus within the brain which gives rise to occasional epileptic seizure may also exert an adverse influence on the general brain development and brain function. This was demonstrated by a case report of a child who had a brain injury at the time of birth. He seemed to develop normally up to the age of 5 months, when he began to have seizures. From this time on there was mental deterioration until the age of 22 months, when surgical removal of an epileptogenic focus was carried out. The cessation of seizures which followed operation has been associated with subsequent general improvement during the seven years which have elapsed since operation.

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[1] Furlow, L. T.: Subpial Resection of the Cortex for Focal Epilepsy: Further Observations, J. A. M. A. **111**: 2092-2095 (Dec. 3) 1938.

[2] Penfield, W., and Erickson, T. C.: Epilepsy and Cerebral Localization, Springfield, Ill., Charles C Thomas, 1941.

[3] Voris, H. C.: Surgical Treatment of Epilepsy, Dis Nerv. System **4**: 363 (Dec.) 1943.

[4] Penfield, W., and Steelman, H.: The Treatment of Focal Epilepsy by Cortical Excision, Ann. Surg. **126**: 740 (Nov.) 1947.

[5] Penfield, W., and Livingston, S.: Birth Injury, Focal Epilepsy and Cortical Excision: Case Report, Pediatrics **4**: 157 (Aug.) 1949.

Radical excision offers hope for many patients who have cortical foci of discharge and whose attacks are not controlled by medication.

PARA-AMINOSALICYLIC ACID IN THE TREATMENT OF PULMONARY TUBERCULOSIS

Bernheim,[1] in 1941, observed that salicylic acid and benzoic acid increase the oxygen consumption and carbon dioxide production of the tubercle bacillus. He concluded that these acids are oxidized as metabolites and that similar chemical configurations possibly play a part in the metabolism of the bacillus. Lehmann,[2] in 1946, investigated a large number of derivatives of benzoic acid and of salicylic acid, searching for a substance with bacteriostatic properties against tubercle bacilli. The most active substance found was 4-aminosalicylic or para-aminosalicylic acid. This substance was bacteriostatic in a concentration of 0.15 mg. per hundred cubic centimeters for the BCG strain of the bovine type of Mycobacterium tuberculosis and exerted a favorable effect on clinical tuberculosis. The inhibitory effect of para-aminosalicylic acid (PAS) in vitro was confirmed by Sievers and by Youmans. In vivo experiments on mice by Youmans and in guinea pigs by Feldman, Karlson and Hinshaw[3] demonstrated the retarding effect of the drug on the development of experimental tuberculosis.

Youmans, Raleigh and Youmans[4] found that para-aminosalicylic acid is highly bacteriostatic in vitro for virulent tubercle bacilli in human infections. Experimental tuberculosis in mice was suppressed by para-aminosalicylic acid when it was administered in the diet in 1 and 2 per cent concentration. Para-aminosalicylic acid and streptomycin when administered to mice simultaneously exerted a suppressive effect on the tuberculous process greater than that of either substance alone. Bloch and his co-workers[5] reported that para-aminosalicylic acid inhibited growth of both the streptomycin-sensitive strain of H-37 RV and the naturally occurring streptomycin-resistant variant, H-37 RVNRI, almost completely in concentration of 1.2 gamma per cubic centimeter. The combination of para-aminosalicylic acid and of streptomycin demonstrated both in culture experiments and in animals a striking inhibitory effect of the combination of the two drugs compared with that of each of the drugs alone. These observations suggest that a combination of the two drugs would permit the use of smaller doses of streptomycin, thus reducing the hazard of toxic effects from the drug and delaying the emergence of streptomycin resistance.

Alin and Difs[6] treated 11 patients at the Serafimer Hospital (Stockholm). These patients had pulmonary lesions sufficiently severe to indicate a thoracoplasty; they were given 14 Gm. of para-aminosalicylic acid daily for one to six months. An equal number of patients with similar lesions served as controls. The only toxic effect noted was an occasional positive Takata reaction and low excretion in the hippuric acid test. The sedimentation reaction during the first month of treatment showed a reduction from 51 to 30 in the treated patients and from 60 to 55 in the untreated. In 3 patients with fever an initial fall of temperature occurred. None of the patients became free from bacilli, nor did any patient escape the indicated thoracoplasty when the general condition allowed the intervention. The only conclusion reached by the Scandinavian investigators was that the investigation should be continued.

Eastlake and Barach[7] treated 12 patients with chronic pulmonary tuberculosis with 10 to 11 Gm. of para-aminosalicylic acid in three to five doses daily for three consecutive weeks with a free interval of one week. One or more courses were given, depending on the tolerance of the patient to the drug. Seven of the seriously ill patients showed a definite decrease in cough, fever and expectoration during the first week. The symptoms recurred after the cessation of treatment. The most consistent side effect of the drug was a diminution in appetite, and some of the patients experienced nausea and vomiting. In 2 patients these symptoms were severe enough to cause cessation of the treatment.

Para-aminosalicylic acid appears to be a therapeutically useful drug in pulmonary tuberculosis, especially in patients from whom streptomycin is withheld for any reason.

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[7] Eastlake, C., Jr., and Barach, A. L.: Use of Para-Aminosalicylic Acid in Chronic Pulmonary Tuberculosis, Dis. of Chest. **16:** 1 (July) 1949.

Current Comment

WASHINGTON A. M. A. MEETING—PHYSICIAN TO BE HONORED IN BROADCAST

The clinical program for the Clinical Session of the meeting of the American Medical Association in Washington, December 6-9, will contain many topics of broad appeal. While other aspects of the meeting will be interesting and informative, one of the highlights will be a nationwide broadcast devoted to the life of a physician. This broadcast will be made Wednesday evening, December 7, as a regular part of the "This Is Your Life" series, starring Ralph Edwards. This series is devoted to dramatizing the lives of Americans who have made outstanding contributions to community and national life. One unique feature of this program will be maintained for the December 7 broadcast: The name of the honored guest will not be revealed until the time of the broadcast, and the guest will not know until then that his life will be dramatized. Physicians attending the American Medical Association meeting will be able to attend the broadcast. Complimentary tickets for admission will be made available at the convention.

REPEATED TUBERCULIN TESTS WITHOUT SENSITIZATION

In 1943[1] the demonstration that tubercle bacilli liberate tuberculin (tuberculoprotein) by autolysis led to the discovery of a new tuberculin adapted to transcutaneous tuberculin testing.[2] This tuberculin could be prepared in a finely pulverized hygroscopic form suitable for suspension in a nonirritating, non-water-soluble, but water-pervious, cellulose adhesive. This permitted intimate application to the skin of a highly active but safe material for diagnosis and surveys. Because this test can be used repeatedly and its administration is simple, relation between its frequent use and hypersensitiveness has been questioned. It has been claimed that an Arthus' phenomenon (hypersensitive allergic condition) can develop from the use of large repeated injections of tuberculin. To determine such likelihood, Jones, Nelson and Dwork[3] repeatedly tested 223 children and adolescents in an orphanage. Their ages were 5 to 20 years. Two to four tests were used in each instance. The investigators found that frequent and repeated transcutaneous autolytic tuberculin testing, extending over more than a six month period, did not produce a hypersensitiveness to tuberculin or to the transcutaneous test. They also found that repeated application in this form did not accentuate or suppress an already existing hypersensitiveness to tuberculin.

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[1] Corper, H. J., and Cohn, M. L.: Autolysis of Tubercle Bacilli and the Production of Tuberculin (Tuberculoprotein), Am. Rev. Tuberc. **48**: 443, 1943.

[2] Corper, H. J.; Clark, C., and Nelson, C. R.: Some Features of Autolytic Tuberculin That Adapt it for Special Specific Test Purposes, Tuberculology **8**: 72, 1946.

[3] Jones, W. W.; Nelson, C.; and Dwork, R. E.: Repeated Transcutaneous Autolytic Tuberculin Tests in Children, Am. Rev. Tuberc. **60**: 45, 1949.

LOCAL RHEUMATIC FEVER PROGRAMS

The New York State Department of Health has issued a "Guide for Local Rheumatic Fever Programs,[1] developed under the chairmanship of Edward R. Schlesinger, director of the Bureau of Maternal and Child Health. The policies, standards and recommended procedures were examined in detail by the Advisory Committee on Rheumatic Fever to the New York State Department of Health, and numerous suggestions from the committee were incorporated. The Guide seeks to outline the types of children for whom the program is intended, methods for finding them, services they need and means by which these can be provided, and basic standards and procedures for insuring the proper utilization of these services. The program is confined for the time being to services for persons under 21 years of age. A local rheumatic fever program is viewed as a cooperative effort on the part of voluntary and official agencies in the community concerned with the problem and the development of the program as part of a basic public health program in a community with a full time health department. An irreducible minimum for a new program would include adequate follow-up services to insure that a diagnosis is made so far as possible, that recommendations for the care of patients are carried out and that patients are not lost after diagnosis. Direct services required by patients consist of: 1. Medical services for diagnosis and treatment of ambulatory patients. These services should be provided through the family physician, who is the key person in discovering cases of rheumatic fever in its early stages. 2. Consultation services, including laboratory, roentgenologic and electrocardiographic studies. 3. Medical services for the diagnosis and treatment of bed patients at home. 4. Institutional care. 5. Follow-up services, after care and rehabilitation. Vocational guidance and training services should be provided to the patient to prepare him for a useful position in society compatible with his physical disability. Supporting services of the program include: 1. Health education of the general public with the view of disseminating information about rheumatic fever as a public health problem, to arouse public interest and to obtain support for the program. 2. Professional education, to consist of a program of postgraduate education for physicians, nurses and other professional personnel. 3. Case finding and reporting. Special diagnostic and consultation services should be provided to aid the physician in establishing a definite diagnosis. 4. Establishment of a case register as a necessary working tool for the use of the administration in directing follow-up services for continuing care of patients and as an aid in the periodic evaluation of the program to determine its effectiveness. To assist in the organization of local programs, the Bureau of Maternal and Child Health makes available on request the following forms: (*a*) a clinic record for initial medical examination, (*b*) a clinic record for reexaminations, (*c*) a report of initial or changed status of the patient and (*d*) a registration card.

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[1] Guide for Local Rheumatic Fever Programs, Office of Public Health Education, New York State Department of Health, 1949.

ORGANIZATION SECTION

Official Notes

SECOND ANNUAL PUBLIC RELATIONS CONFERENCE

American Medical Association Headquarters and Bismarck Hotel

PROGRAM

Saturday, Nov. 5, 1949

Registration

9:00 a. m., Auditorium, Ninth Floor, American Medical Association Headquarters.

Morning Session:

9:30 a. m., Auditorium, Ninth Floor, American Medical Association Headquarters.

Address of Welcome.

Dr. George F. Lull, Secretary and General Manager, American Medical Association.

Conference Comments.

Lawrence W. Rember, Public Relations Director, American Medical Association.

ORGANIZING FOR AN OVER-ALL PUBLIC RELATIONS PROGRAM

Dr. Max M. Hattaway, Presiding, Chairman, Council on Medical Service and Public Relations, Louisiana State Medical Society.

Organizing the State Public Relations Program at District and County Levels.

Dr. Donald B. Koonce, Chairman, Public Relations Committee, North Carolina Medical Society.

Working with All Other Committees of the State Society.

Dr. Percy E. Hopkins, Chairman Committee on Medical Service and Public Relations, Illinois State Medical Society.

Cooperation Desired by Public Relations Committees from State Society and American Medical Association Headquarters.

Dr. Charles Farrell, Chairman, Committee on Public Policy and Relations, Rhode Island Medical Society.

Fifteen minute question and answer period after each topic.

Luncheon

12:00 noon, Cafeteria, Fifth Floor East, American Medical Association Headquarters.

Those attending are invited to be guests of the American Medical Association for a buffet luncheon in the new cafeteria. Time has been allowed following luncheon for you to tour the new addition to the American Medical Association building.

Afternoon Session:

1:30 p. m., Auditorium, Ninth Floor, American Medical Association Headquarters.

STATE SOCIETY PUBLIC RELATIONS PROJECTS

Dr. A. E. Cardle, Presiding, Chairman, Health Education Committee, Minnesota State Medical Association.

Tackling the Public Relations Problem of Getting Doctors Into Rural Areas.

Dr. J. H. A. Peck, President, Kansas Medical Society.

The PR Value of a Grievance Committee.

Dr. George H. Garrison, President, Oklahoma State Medical Association.

Press and Radio Relations for County Societies and Individual Doctors.

Dr. McKinnie Phelps, Chairman, Public Policy Committee, Colorado State Medical Society.

Full Utilization of the Woman's Auxiliary as a Public Relations Force.

Dr. C. Allen Payne, Chairman, Advisory Committee to the Woman's Auxiliary to the Michigan State Medical Society.

Fifteen minute question and answer period after each topic.

Social Hour

5:30 p. m., Green Room, Bismarck Hotel.

Dinner Session:

6:30 p. m., Walnut Room, Bismarck Hotel.

Dr. Louis Bauer, Toastmaster, Chairman, Board of Trustees, American Medical Association.

The Profession and Public Relations.

Dr. Ernest E. Irons, President, American Medical Association.

Selling Liberty, A Public Relations Project for Every American.

Leonard E. Read, President, The Foundation for Economic Education, Inc.

Sunday, Nov. 6, 1949

Morning Session:

Get It Off Your Chest.

9:30 a. m., Parlor "H," Bismarck Hotel.

Dr. F. S. Winslow, Presiding, Chairman, Public Relations Committee, New York Medical Society.

"One of Our Best Projects Is—"

Intermission

What We Should Like to Know.

Luncheon Session:

12:15 p. m., Walnut Room, Bismarck Hotel.

Dr. Elmer L. Henderson, Toastmaster, President-Elect, American Medical Association.

Public Relations is Our Business.

Averell Broughton, President, Public Relations Society of America.

THE SCIENTIFIC EXHIBIT, SAN FRANCISCO SESSION—JUNE 26-30, 1950

The Scientific Exhibit will be one of the features of the Annual Session of the American Medical Association in San Francisco, June 26-30, 1950.

The nineteen sections of the Scientific Assembly will participate with groups of exhibits dealing with the various branches of medicine, as well as the allied medical sciences. Application blanks for space in the Scientific Exhibit are now available and may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 N. Dearborn Street, Chicago 10, Ill.

Washington Letter

(From a Special Correspondent)

Oct. 24, 1949.

Foreign Military Medical Leaders Greeted in Capital

European and Canadian military medical chiefs were entertained in Washington October 21, en route to the twelfth International Congress of Military Medicine and Pharmacy held in Mexico City October 28-29. Members of the group were Lieut. Gen. Sir Neil Cantlie, director general of British Army Medical Services; Brig. William Coke, Canadian Army medical director; Wing Comdr. J. H. Neal, Royal Air Force; Brig. Georges Apalakis, Greek Army surgeon general; Prof. Sanvenero Rosselli, official delegate from Italy; Major Gen. David Lindsjo, surgeon general of Swedish Defense Forces; Major Gen. Johannes Heinenen, surgeon general of the Finnish Army, and Col. Brig Hans Meuli, Swiss Army surgeon general.

With a planned stopover at the Air Force School of Aviation Medicine, San Antonio, Texas, the military party left Washington for Mexico City October 22. Traveling in the same plane were the following U. S. delegates: Army Surgeon General Raymond W. Bliss, Navy Surgeon General Clifford A. Swanson, Air Force Deputy General Harry G. Armstrong, Major Gen. George E. Armstrong, Rear Adm. Joel T. Boone, Brig. Gen. Wallace H. Graham, Brig. Gen. Edward J. Kendricks and Dr. R. C. Williams, assistant surgeon general of Public Health Service in charge of the Bureau of Medical Services.

State Health Officers Act on Various Issues

The Association of State and Territorial Health Officers, holding its annual meeting here October 19-22, adopted resolutions on a variety of subjects, texts of which will be made public later. Among those who addressed the four day conference were Surgeon General Leonard A. Scheele, Dr. Richard L. Meiling, director of the Office of Medical Services in Department of Defense, and Federal Security Administrator Oscar R. Ewing. The session of Congress that adjourned October 19 "displayed more interest in health measures than any Congress in history," said Ewing. Reviewing its achievements, he cited final enactment of a bill amending the Hill-Burton Act to double—to $150,000,000 annually—the federal contribution toward hospital construction; Senate passage of legislation for support of local public health units, medical schools and school health services, and House committee approval of the medical school assistance bill.

Defense Secretary Johnson Reaffirms Medical Objectives

Secretary of Defense Louis Johnson on October 17 directed a special memorandum to the secretaries of the Army, Navy and Air Force reminding them that "the primary mission of the medical services of each of the military departments is the support of the respective combatant arms and that the organization of the medical services should be scaled to that end."

"Medical training, medical research and the hospital services of the Department of Defense must be constantly directed to the accomplishment of the primary mission as stated above and all nonmilitary activities must, therefore, assume a secondary role," the extraordinary directive stated.

Implicit in the memorandum, according to military spokesmen, was notice that fundamental medical research, postgraduate medical training and other activities which are not translatable rapidly into health benefits for uniformed personnel are to be deemphasized. The action taken by Secretary Johnson was at the request of the Armed Forces Medical Advisory Committee, of which Charles P. Cooper is chairman.

Children's Bureau Engages Five Medical Consultants

Katharine F. Lenroot, chief of the U. S. Children's Bureau, has appointed five prominent authorities in specialized fields of maternal and child health as part time consultants to the Bureau's Division of Health Services. They are Dr. Harry H. Gordon, professor of pediatrics, University of Colorado, and an expert in care of prematurely born infants; Dr. William G. Hardy, director of the Hearing and Speech Center at Johns Hopkins University School of Medicine; Dr. Meyer A. Perlstein of Chicago, who will advise on development of state programs for cerebral palsied children; Dr. Grete L. Bibring, chief of psychiatric services at Beth Israel Hospital, Boston, consultant on mental health aspects of state child health programs, and Dr. John Whitridge Jr. of Baltimore, who will be available for consultation on obstetric services, particularly in rural areas.

"This service marks a new departure in consultation provided by the Children's Bureau," said Dr. Leona Baumgartner, associate chief of the Children's Bureau, "in that it will begin to make available throughout the country top quality medical advice in these fields, heretofore available only in a relatively few states. With these consultants available through the Bureau, more states will be able to improve the quality of care provided in their maternal and child health and crippled children's programs."

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

Annual Conference of State Secretaries and Editors, Chicago, A. M. A. Building, Nov. 3-4. Dr. George F Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Pediatrics, San Francisco, Nov. 14-17. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Medical Women's Association, Midyear Meeting, Tucson, Ariz., Nov. 10-11. Dr. Grace Talbott, 49 W. 49th St., New York 20, Corresponding Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 5-7. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

American Society of Tropical Medicine, Memphis, Tenn., Nov. 6-9 Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Nov. 10-12. Col. James M. Phalen, Army Institute of Pathology, Washington 25, D. C., Secretary.

Central Society for Clinical Research, Chicago, Drake Hotel, Nov. 4-5. Dr. Kenneth G. Kohlstaedt, 960 Locke St., Indianapolis 7, Secretary.

International College of Surgeons, United States Chapter, Atlantic City, Haddon Hall, Nov. 7-12. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago 10, Secretary.

Inter-State Post Graduate Medical Association of North America (International Medical Assembly), Philadelphia, Oct 31-Nov. 3. Dr. Tom B. Throckmorton, Equitable Bldg., Des Moines, Iowa, Secretary.

Neurosurgical Society of America, Quebec, Canada, Chateau Frontenac, Oct. 30-Nov. 1. Dr. Edward Schlesinger, 710 W. 168th St., New York, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Defillo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Cincinnati, Nov. 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Southwestern Medical Association, Albuquerque, New Mexico, Nov. 9-12. Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Texas, Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

PHARMACISTS WANTED

Pharmacists for civilian employment with the Army of Occupation in Japan are urgently needed. These positions pay up to $3,727 per year plus a 10 per cent foreign allowance and free housing. Transportation is furnished by the government. Because of a shortage of suitable housing, dependents are not permitted. Persons selected for these positions must agree to remain a minimum of two years. Pharmacists interested should contact The Department of the Army, Overseas Affairs Branch, 1660 East Hyde Park Boulevard, Chicago.

EXHIBIT OF MEDICAL STAMPS

An exhibit of stamps issued in honor of medicine is on display at the Army Medical Library, Seventh and Independence avenues, Washington, D. C. It is now possible, the announcement states, to provide philatelic material for nearly all the great landmarks in the history of medicine. Stamps of medical and scientific interest have been issued in large numbers in the last twenty years. Expert philatelists and collectors will find the exhibit of particular interest.

OFFICERS CERTIFIED AS SPECIALISTS

Five more Army medical officers have recently been certified as specialists by American boards, according to an announcement by the Surgeon General's office. Four of the new specialists are in the Regular Army and one is in the Medical Corps Reserve. Two were certified in internal medicine and one each in surgery, urology and radiology. The two internists are Lieut. Col. Edward T. Spunt (MC,R) and Major William M. Webb (MC). Col. George L. Beatty (MC) was certified in surgery, Lieut. Col. Romeyn J. Healy Jr. (MC) in radiology and Major John N. Furst (MC) in urology.

COURSES IN RADIOLOGIC DEFENSE

The following three week courses in chemical warfare, radiologic defense and associated subjects will be given at the Chemical Corps School, Edgewood, Md. The courses are designed especially for physicians.

Opening Date	Closing Date	Opening Date	Closing Date
January 9	January 27	May 1	May 19
January 30	February 17	June 5	June 23
March 6	March 24	July 10	July 28
April 3	April 21		

NAVY

NAVY'S HEALTH RATE AT HIGHEST PEAK

Rear Admiral C. A. Swanson, the Surgeon General, reports that the Navy's health rate is higher than at any time since complete medical department records were started in 1850. The incidence rate for diseases, injuries and poisonings among naval personnel dropped during the calendar year 1948 to the lowest ever recorded—442.8 per thousand. The period 1943-1947 was the longest period during which the annual incidence rate for all causes remained below 500 per thousand. A decrease in communicable and noncommunicable diseases among naval personnel is primarily responsible for the improved health rate.

Of the twenty-seven diagnostic classes of diseases, only one reversed the general trend toward lower incidence rates. Class VIII, which includes common infectious diseases of the respiratory type, such as common colds, increased from 100 in 1947 to 104.3 in 1948. The incidence rate for venereal diseases continued its downward trend. The rate for 1948 was 66.6 per thousand, compared with 85.8 in 1947 and 71.6 in 1946. During 1948 the rate declined from 81.9 in January to 50 in December.

The incidence for tuberculosis declined from 1.8 per thousand average strength in 1947 to 1.1 per thousand in 1948. This reduction of about 40 per cent shows the effect of the Navy's intensive campaign to locate and treat infected persons before they become infectious to others. The incidence rate for mental diseases declined slightly, from 8 to 7.6 per thousand, in 1948.

The death rate among naval personnel for all causes in 1948 was minutely higher than the previous year, 2.04 per thousand average strength as compared with 2.03 in 1947. However, the Navy's death rate was lower than in 1948 in only two other years. Although the total death rate has fallen, the share ascribed to injuries has steadily increased. In 1948, injuries were responsible for 81 per cent of all deaths, with a rate of 1.66 per thousand strength, while the rate for disease deaths was only 0.38 per thousand.

CERTIFIED BY SPECIALTY BOARDS

Captains Robert W. Babione, H. K. Sessions and Sterling S. Cook and Comdr. Robert E. Rock have been certified by the American Board of Preventive Medicine and Public Health in the Founders Group.

DUTY UNDER INSTRUCTION

The following medical officers have been nominated for duty under instruction in the Graduate Medical Training Program:

Comdr. William M. Enright, to a fellowship in dermatology and syphilology, Washington University School of Medicine, St. Louis, Missouri.

Comdr. John S. Gruggel, to instruction in industrial medicine, Harvard School of Public Health, Boston.

Comdr. Eugene P. Harris, to a residency in otolaryngology, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Comdr. Herbert Wilson Jr., to a residency in pathology, Naval Hospital, Long Beach, Calif.

Lieut. Comdr. Philip L. Nova, to a residency in surgery, Naval Hospital, San Diego, Calif.

Lieut. Comdr. John D. Boland (MC, USN) to a residency in psychiatry at the Naval Hospital, Philadelphia.

Lieut. Comdr. William A. McCausland (MC, USNR) to instruction in aviation medicine at the Naval School of Aviation Medicine and Research (NAS) Pensacola, Fla.

Lieut. James N. Sussex, to a fellowship in child psychiatry, Philadelphia Child Guidance Clinic, Philadelphia.

Lieut. Charles A. Patterson (MC, USNR) to instruction in aviation medicine at the Naval School of Aviation Medicine and Research (NAS) Pensacola, Fla.

Lieut. (jg) Frank F. Allen, to a residency in surgery, Naval Hospital, Chelsea, Mass.

Lieut. (jg) Frank H. Austin Jr., to a residency in surgery, Naval Hospital, Long Beach, Calif.

Lieut. (jg) Merrill A. Bender, to a residency in radiology, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Larry J. Hines, to a residency in surgery, Naval Hospital, San Diego, Calif.

Lieut. (jg) Cunningham R. MacCordy, to a residency in anesthesiology, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Richard B. Means Jr., to instruction in submarine medicine, Naval Submarine School, Submarine Base, New London, Conn.

Lieut. (jg) Robert F. Neal, to a residency in pediatrics, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Edward E. Parker, to a residency in surgery, Naval Hospital, Great Lakes, Ill.

Lieut. (jg) Harvey O. Randel, to instruction in pediatrics, University of Pennsylvania Graduate School of Medicine, Philadelphia.

Lieut. (jg) Thomas W. D. Smith, to a residency in internal medicine, Naval Hospital, Oakland, Calif.

Lieut. (jg) Harry W. Vandever, to instruction in aviation medicine, Naval School of Aviation Medicine and Research, Naval Air Station, Pensacola, Fla.

Lieut. (jg) Raymond H. Watten, to a residency in internal medicine, Naval Hospital, Long Beach, Calif.

Lieut. (jg) John R. McLaren (MC, USN) to a residency in obstetrics and gynecology at the Naval Hospital, Philadelphia.

Lieut. (jg) Raymond H. Watten (MC, USN) to a residency in internal medicine at the Naval Hospital, Long Beach, Calif.

AIR FORCE

APPOINT CIVILIAN CONSULTANTS

Twenty civilian physicians, representing various medical specialties, have been named consultants to the U. S. Air Force Medical Service, Major Gen. Malcolm C. Grow, the Surgeon General, has announced. Consultants must be qualified to teach medical officers of the Air Force Medical Service in continuation of their residency training in fulfilment of specialty board requirements; in addition, they advise and counsel the Surgeon General on matters that apply particularly to aviation medicine.

The consultants appointed are:

Dr. Conrad Berens, New York, ophthalmology.

Dr. Paul A. Campbell, Chicago; Dr. Samuel J. Crowe, Baltimore, and Dr. William A. Morgan, Washington, D. C., otolaryngology.

Dr. R. Lee Clark, Houston, Texas, and Dr. Alton Ocshner, New Orleans, surgery.

Dr. Alfred R. Shands Jr., Washington, D. C., orthopedic surgery.

Dr. Robert E. Moran, Washington, D. C., plastic surgery.

Dr. Cortez F. Enloe, Manhasett, ong Island, N. Y.; Dr. Elmer L. Henderson, Louisville, Ky.; Dr. William P. Holbrook, Tucson, Ariz.; Dr. Philip T. Kniess, Columbus, Ohio, and Dr. Russell V. Lee, Palo Alto, Calif., internal medicine.

Dr. Herbert B. Wright, Cleveland, urology.

Dr. Frank Fremont-Smith, Massapeque, Long Island, N. Y.; Dr. Donald W. Hastings, Minneapolis, and Dr. John M. Murray, Boston, neuropsychiatry.

Dr. Charles E. Kossman, New York, cardiology.

Dr. W. Randolph Lovelace, Albuquerque, N. Mex., aviation medicine.

Dr. Howard A. Rusk, New York, physical medicine.

OFFICERS TO VISIT MEDICAL COLLEGES

In an effort to spur procurement of medical officers for the U. S. Air Force Medical Service, three teams of officers will visit medical colleges throughout the United States. Each team will be composed of a medical officer engaged in a professional activity, a dental officer, and a medical officer-pilot. Arrangements will be made with deans and professors of military science and tactics of the colleges in advance, so that the greatest numbers of students possible may be personally contacted. One team will have Washington, D. C., as a base of operation, another, Dayton, Ohio, and the third, San Antonio, Texas.

PERSONAL

Lieut. Col. Fratis L. Duff, of the Air Force Medical Service, has been accepted for graduate training at the Johns Hopkins University School of Public Health, Baltimore.

PUBLIC HEALTH SERVICE

REGULAR CORPS EXAMINATION FOR MEDICAL OFFICERS

A competitive examination for appointment of medical officers in the Regular Corps of the United States Public Health Service will be held Jan. 9-11, 1950, at a number of points throughout the United States. Applications must be received no later than Dec. 12, 1949. All commissioned officers are appointed to the general service and are subject to change of station. Appointments will be made in the grades of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Appointments are permanent and provide opportunities to qualified physicians for a lifetime career in clinical medicine, research and public health.

Requirements for appointment in the grade of assistant surgeon: the applicant must be a citizen of the United States, at least 21 years of age and a graduate from a recognized school of medicine. Physicians who are successful in the examination and are now serving internships will not be placed on active duty in the Regular Corps until completion of internship. Applicants for appointment in the grade of senior assistant surgeon must meet the aforementioned requirements and must have had a total of at least ten years of educational training and professional experience subsequent to high school. The entrance examination will include written professional tests, an oral interview and a physical examination.

Gross pay is governed by the Career Compensation Act of 1949 and is identical to that of officers of equivalent rank in the Army and Navy. Under current law, entrance pay for an assistant surgeon with dependents is $5,686.56 per annum, and for senior assistant surgeon with dependents, $6,546. These figures include the $1,200 annual additional pay received by medical officers as well as subsistence and rental allowance. Retirement pay after thirty years of service or at the age of 64 is three fourths of annual base pay at the time of retirement. Retirement for disability is authorized under the Career Compensation Act and disability retirement pay is at a minimum, one half of the annual base pay at the time of retirement. Additional benefits include thirty days' annual leave, sick leave, full medical care and many of the usual privileges extended to members of the military forces.

Application forms may be obtained from the Surgeon General, United States Public Health Service, Federal Security Agency, Washington 25, D. C.

VETERANS ADMINISTRATION

MORE LIBERAL COMPENSATION RATES

Public Law 339, liberalizing compensation benefits for veterans, becomes effective Dec. 1, 1949. The new law will:

1. Provide additional compensation for veterans with dependents who are rated 50 per cent or more disabled. Heretofore, only veterans with dependents rated 60 per cent or more disabled were eligible to receive additional compensation.

2. Raise the rate on compensation for World War I veterans with "presumed" service-connected disabilities to the rate currently being paid to veterans whose disabilities are determined to be directly service connected.

3. Establish new progressive compensation ratings for veterans with arrested tuberculosis. It provides for 100 per cent rating for the first two years following the date the disease was arrested. For four years after that, the rate is set at 50 per cent. The law also fixes disability ratings for longer periods and requires a veteran to submit to examination and follow prescribed treatment. Failure to do so may result in his rating being reduced from 100 per cent to 50 per cent for the two years following the arrest of the disease.

4. Increase the death compensation to wartime widows with one or more children.

5. Liberalize present rules on compensation for injury or disease incurred while under military or civil confinement. It holds such confinement to be "in line of duty," provided a court-martial sentence of dishonorable discharge is remitted, or in cases of civil confinement the offense does not involve a felony.

For all World War II veterans with service-connected disabilities and those World War I veterans whose disabilities have been determined by the Veterans Administration to be directly service connected, the 8.7 per cent across-the-board increase will apply. For example, a veteran who is 10 per cent disabled and comes under either of those two categories will receive an increase in his monthly compensation check from $13.80 to $15. Others in those categories whose disabilities range up to the 100 per cent maximum will receive proportionate increases in their checks. Thus, such a 100 per cent disabled veteran will get $150 instead of the $138 he now receives. Peacetime rates for service-connected disabilities are fixed by law at 80 per cent of wartime rates. Thus, they will be automatically increased by the new law also.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

"Medical Practice in the Changing Order."—A series of six round table discussions on "The Practice of Medicine in the Changing Order" began October 4 and will be presented on the first Tuesday of each month thereafter. The series is sponsored by the School of Public Health and the University of California Medical School and by the Alameda County Medical Association, in cooperation with the University of California Extension. The meetings will be held at 8 p. m. at 159 Forestry Building, Berkeley Campus. The purpose of the series is "a completely informed medical profession capable of exercising continuous leadership in the complex fields of medical economics, prepayment plans, distribution of medical care, public medical care programs, foreign medical care plans and health legislation. A registration fee for all but interns and residents will be charged. Attendance is limited to Doctors of Medicine.

ILLINOIS

Symposium on Industrial Medicine.—A Symposium on Industrial Medicine, which has been arranged by the committees on industrial health of the Chicago Medical Society and the Illinois State Medical Society; the Council on Industrial Health, American Medical Association; the Division of Industrial Health, Illinois Department of Public Health, and the department of preventive medicine and public health, University of Illinois College of Medicine, will be held at the University of Illinois College of Medicine, Chicago, November 2 at 2 p. m. The speakers will be: Drs. George F. Lull, Secretary and General Manager of the American Medical Association, Chicago; William J. Fulton, medical director, General Motors Corporation, Detroit; Joseph H. Chivers, medical director, Crane Company, Chicago; Jean S. Felton, medical director, Oak Ridge National Laboratory, Oak Ridge, Tenn.; Milton H. Kronenberg, assistant medical director, Caterpillar Tractor Company, Peoria; Clarence O. Sappington, industrial health consultant, Chicago, and Leonard F. Weber, clinical professor of dermatology, University of Illinois, Chicago. A dinner will be served at the Graemere Hotel at 6 p. m., after which the meeting will continue. All those interested in industrial medicine are invited to attend.

Chicago

Dr. Van Dellen Appointed Assistant Dean.—Dr. Theodore R. Van Dellen, assistant professor of medicine, Northwestern University Medical School, Chicago, has been appointed assistant dean succeeding Dr. George H. Gardner, who resigned. Dr. Van Dellen received his medical degree in 1936 from Northwestern University Medical School, Chicago. He is director of the Florsheim Heart Clinic at the university and author of the daily health column in the Chicago *Tribune.*

INDIANA

Medical School Scholarships.—The Indiana State Medical Association has awarded medical school scholarships to Kermit Q. Hibner of Indianapolis, a freshman in the Indiana University School of Medicine, and Fred Harless of LaGrange, a sophomore. After completion of their internships, each has agreed to practice in a rural community needing medical services. Scholarships, worth $500 annually, are held by five other medical school students who likewise will enter rural practice in accordance with scholarship requirements.

MASSACHUSETTS

Dr. Stevenson Goes to Pittsburgh.—Dr. Stuart S. Stevenson, formerly assistant professor of child health at Harvard Medical School, Boston, accepted the appointment of research professor of pediatrics at Children's Hospital of Pittsburgh and the University of Pittsburgh School of Medicine effective September 1. Dr. Stevenson is a graduate of Yale University Medical School, 1939. He was on the faculty of Yale University, 1940-1943, before he became associated with Harvard University. He was an assistant surgeon of the U. S. Public Health Service 1943-1946 and served on the staff of the health commission of the Rockefeller Foundation 1944-1946.

MICHIGAN

Lectures on "Frontiers in Chemistry."—The annual "Frontiers in Chemistry" lecture series sponsored by the International Society for the Friends of the Kresge Hooker Library and Wayne University's department of chemistry began on October 10 and will continue through November 28. The programs are scheduled for 7 p. m. in room 314 of Wayne's main building. The remaining lectures are as follows:

Oct. 31, Paul D. Bartlett, Ph.D., Cambridge, Mass., Recent Work on the Mechanism of Peroxide Reactions.
Nov. 7, Lee I. Smith, Ph.D., Minneapolis, Chemistry of Some Cyclopropanes.
Nov. 14, Albert L. Lehninger, Ph.D., Chicago, The Enzymatic Oxidation of Fatty Acids.
Nov. 21, Maurice L. Huggins, Ph.D., Rochester, N. Y., Properties of Long-Chain Compounds.
Nov. 28, D. C. Grahame, Ph.D., Amherst, Mass., Progress in the Study of the Electrical Double Layer.

The noncredit registration fee for the series is $5.

MONTANA

Dr. Larson to Succeed Dr. Parker at Hamilton.—Dr. Carl L. Larson has been appointed director of the Rocky Mountain Laboratory of the Public Health Service at Hamilton to succeed the late Ralph R. Parker, Ph.D. (The Journal, Oct. 8, 1949, p. 399). Dr. Larson has been assistant chief of the Laboratory of Infectious Diseases, Microbiological Institute of the U. S. Public Health Service. He was born at Butte, Mont., Jan. 28, 1909, received his B.S. from Montana State College, Bozeman, in 1932 and spent six years investigating wildlife disease in Minnesota for the Bureau of Biological Survey of the U. S. Department of Agriculture. He received his M.D. from the University of Minnesota Medical School, 1939.

NEW YORK

Postgraduate Instruction.—The Medical Society of the State of New York in cooperation with the New York State Department of Health has arranged a one day meeting for the Monroe County Medical Society to be held at the Academy of Medicine Building, Rochester, November 10 at 9:45 a. m. The speakers will be:

Stanley E. Bradley, New York, Renal Insufficiency.
J. William Hinton, New York, Upper Gastrointestinal Tract Bleeding.
George G. Deaver, New York, Rehabilitation of the Hemiplegic.
Howard C. Stewart, Albany, BCG.

New York City

Memorial Hospital for Chronic Diseases.—The cornerstone for the new Bird S. Coler Memorial Hospital on Welfare Island was set October 10, with Mayor William O'Dwyer officiating. The 2,000 bed hospital will be the second of three units which will eventually designate Welfare Island as a medical center for the care and treatment in long term cases. The building will contain an auditorium to accommodate 1,300, with a balcony for additional wheelchair patients. The hospital will be affiliated with the New York Medical College, Flower and Fifth Avenue Hospitals, which will provide the professional staff.

Dr. Pitts to Head Department at Cornell.—Dr. Robert F. Pitts, professor of physiology at Syracuse University College of Medicine since 1946, will return to the Cornell University Medical College faculty in New York on July 1, 1950, to become head of the department of physiology and biophysics and professor of physiology. From 1942 to 1946 he was in the physiology department at Cornell University Medical College. Dr. Pitts obtained his Ph.D. degree at Johns Hopkins University, Baltimore, in 1932 and his M.D. degree from New York University in 1938. From 1938 to 1940 he was a fellow of the Rockefeller Foundation. He spent one year at the Neurological Institute at the Northwestern University Medical School and another year at the Eldridge Reeves Johnson Foundation for Medical Physics at the University of Pennsylvania College of Medicine, Philadelphia.

OHIO

Honor 50 Year Practitioners.—Six Trumbull County physicians who have completed 50 years of medical service were honored October 12 by the Trumbull County Medical Society in Youngstown. A certificate and gold pins from the Ohio State Medical Association were presented by Dr. Paul A. Davis, Akron, counselor for the sixth medical district, to Drs. David R. Williams, Girard; John C. Henshaw and Simon S. MacKenzie, Warren; Beman G. McCurley, Cortland, and John M. Elder and Henry V. Ormerod, Niles.

Lectures on the Lead Problem.—A course for physicians, entitled "The Lead Problem in Industry," will be presented November 7-11 at the Kettering Laboratory, University of Cincinnati College of Medicine. Among the guest speakers on the program will be:

Mr. Robert L. Ziegfeld, New York, Present Industrial Significance of Lead.
Leslie Silverman, Sc.D., Boston, Plant Survey by Engineering Technics.
Elston L. Belknap, Milwaukee, Diagnosis.
Mr. Harry W. Wheeler, Baton Rouge, La., Methods of Control.

Registration, which will be limited to 35 persons, must be made in advance and accompanied with the tuition fee of $50, which may be mailed to Communications, c/o Dr. Wm. F. Ashe, Institute of Industrial Health, College of Medicine, Cincinnati 19. Checks should be made payable to the Kettering Laboratory.

PENNSYLVANIA

Society Election.—The Reading Eye, Ear, Nose and Throat Society at its recent meeting elected the following officers for the coming year: Drs. William J. Hertz, Allentown, president; Roy Deck, Lancaster, president-elect; Philip R. Wiest, Reading, treasurer, and Paul C. Craig, Reading, secretary.

New Research Laboratory.—Ground was broken September 27 for the new $4,000,000 medical research laboratories to be erected by Sharp and Dohme at West Point, Pa., before officials of Montgomery County and civic, church and business leaders. John S. Zinsser, Philadelphia, chairman of the board of Sharp and Dohme, welcomed the visitors and pointed out that the cooperation of the people of the community had made the choice of the new plant location a happy one. Brief addresses were presented by H. Clayton Stauffer, president, Board of Education, Upper Gwynedd Township; T. Malcolm Williams, president, Board of Supervisors, Upper Gwynedd Township, and Frank Martin, president, Lansdale Chamber of Commerce. A luncheon for the official party was held in the plant cafeteria The four story building, which will contain 110,000 square feet of floor space, is expected to be completed in the spring of 1951.

Pittsburgh

Gibson Laboratory Established.—The University of Pittsburgh School of Medicine has announced the opening of the Gibson Laboratory, which was established by a grant from the Addison H. Gibson Foundation. The laboratory provides additional facilities for studies in applied physiology in the University, carries on investigations of arteriosclerosis and provides service facilities for handling radioactive isotopes in the university. Dr. Campbell Moses Jr. has been appointed director of the laboratory.

TEXAS

Pilot Study on Diabetes.—Dallas City Health Department, the Dallas Diabetic Association and the Dallas County Medical Society are sponsoring a pilot study of diabetes education and control in the city. Dallas is one of four cities in the nation chosen by the U. S. Public Health Service for a study of the disease. They plan to determine how the city's public health facilities can be used in a diabetes program. Dr. James W. Bass, city health officer, will direct the program and will be assisted by members of the U. S. Public Health Service.

New Children's Hospital.—The new Driscoll Foundation Hospital for Children will be erected in Corpus Christi to serve children up to 16 years of age. Funds for the construction and operation of the hospital will be provided from the Driscoll Foundation, established by the late Mrs. Clara Driscoll. The building is designed to accommodate 100 patients in the first project and will be expanded to 200 beds in the future. Facilities include a school classroom for children obliged to remain in the hospital for any appreciable time, and recreational facilities.

WISCONSIN

Loevenhart Memorial Lecture.—The annual Loevenhart Memorial Lecture sponsored by Phi Delta Epsilon Medical Fraternity will be delivered by Dr. Paul D. White of Boston in the University of Wisconsin Medical School, Madison, Auditorium S.M.I., on November 28 at 8 p. m.

Visiting Lecturer from Norway.—Professor Johann Holtz of the University of Norway in Oslo will be at the University of Wisconsin Medical School as a visiting lecturer in the department of surgery. Dr. Holtz' program includes the following addresses: November 8, at 8 p. m., he will address the Medical School Society on "Gastric Carcinoma from a Surgical Point of View." On November 10, at 4 p. m., he will address a convocation of medical students and faculty on "Surgical Treatment of Pulmonary Tuberculosis."

Grant to Aid Pediatric Teaching.—With the aid of a $10,000 grant awarded to the Marquette University School of Medicine, Milwaukee, by the Edward Uhrig Foundation, under the terms of the will of the late Rosa Uhrig of Milwaukee, Marquette University will expand its teaching program in pediatrics by adding a full time physician instructor to its staff. The appointee will carry on teaching activities at the Milwaukee Children's Hospital.

GENERAL

Establish Brain Registry.—The American Academy for Cerebral Palsy has established a brain registry at the Chicago State Hospital. The academy welcomes the receipt of brains of specimens derived from patients who had cerebral palsy and of whom good clinical histories have been taken. Correspondence on this subject should be directed to Meyer A. Perlstein, M.D., 4743 North Drake Avenue, Chicago 25.

Medicolegal Congress.—The Academy of Forensic Sciences will hold its second meeting in Lincoln Hall, Northwestern University School of Law, Chicago, Jan. 26-28, 1950. The meeting will be devoted to a discussion of forensic science problems and a formal organizational program. Persons interested in presenting papers should contact Dr. Abraham W. Freireich, 180 Hempstead Avenue, Malverne, N. Y., or Ralph F. Turner, acting secretary, Department of Police Administration, Michigan State College, East Lansing, Mich.

Dunham Lectureship.—The annual Edward K. Dunham Lectureship for the Promotion of Medical Sciences will be held in the Amphitheater, Building D, Harvard Medical School, Boston, on November 3, 8 and 10 at 5 p. m. Dr. Christopher Howard Andrewes, member of the scientific staff at the National Institute for Medical Research, Hampstead, London, will deliver the three lectures on "Some Properties of Viruses," "Epidemic Influenza" and "The Puzzle of the Common Cold."

Association of Blood Banks.—The second annual meeting of the American Association of Blood Banks will be held in the Olympic Hotel, Seattle, November 3-5, under the presidency of Dr. Ralph G. Stillman, New York. Invited speakers include:

Mrs. Bettina B. Carter, Pittsburgh, Progress in Preparation and Use of Rh Hapten.
James J. Griffitts, Miami, Florida, The "T" Agglutinin Phenomenon in Human and Animal Blood.
Hugh W. Jones, Seattle, Serologic Changes in Lupus Erythematosus Disseminatus.
Ernest E. Muirhead, Dallas, Texas, Incompatible Blood Transfusions: Further Experience with Their Management.
Joseph M. Hill, Dallas, Texas, Antibodies of Different Reactivities.
Emile E. Palmquist, Seattle, How the Health Officer Looks at the Blood Bank.

Meetings on Ophthalmology.—The National Society for the Prevention of Blindness will hold a five day conference in conjunction with the Interim Session of the Pan-American Association of Ophthalmology, March 26-30, 1950, at the Floridian Hotel, Miami Beach, Fla. The theme of the meeting will be "The Americas Unite to Save Sight"; among the subjects to be discussed are current blindness prevention programs in countries of the Western Hemisphere; trachoma; industrial ophthalmology; eye problems of school children, and medical and social management of the glaucomas. Details may be obtained from the National Society for the Prevention of Blindness, 1790 Broadway, New York 19. Reservations should be made with the Floridian Hotel, 540 West Avenue, Miami Beach.

Airline Increases Medical Facilities.—Complete medical facilities for the more than 3,000 Trans World Airline employees in the Atlantic Region have been established at New York's La Guardia Field through consolidation of the airline's international and domestic operations divisions. Eleven separate rooms comprising the medical unit planned by Dr. Harold B. Dye, manager of medical services for the airline, include an audio room, x-ray room, examining room, laboratory and emergency clinic as well as office space for the physicians, nurses and secretarial staff. All flying personnel are examined each year with the exception of hostesses who get a biannual physical examination. Eight persons, including five nurses, a technologist and two secretaries, comprise the present staff under the direction of Dr. Robert Rehm, Wilmington, Del., former Army air flight surgeon, and regional supervisor of medical services for TWA. Two more physicians are to be appointed to the staff.

Cancer Research Fellowships.—An exchange fellowship program whereby American investigators in fundamental cancer research and clinical investigation will study on a fellowship basis in Great Britain, and an equal number of British scientists will be trained at research centers here, has evolved from a visit of representatives of the British Empire Cancer Campaign to the offices of the American Cancer Society. The British-

American Exchange Fellowships in Cancer Research, awarded by the American Cancer Society on the recommendation of the Committee on Growth of the National Research Council, are now open to citizens of the United States who have M.D., S.D. or Ph.D. degrees. Fellowships are awarded for one year and carry a stipend of $4,020 and an allowance of $600 for travel to the place of the fellowship in Great Britain. Application forms may be secured and submitted to the Executive Secretary, Committee on Growth, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Symposium at Pasadena on Air Pollution.—The Stanford Research Institute in cooperation with the California Institute of Technology, Pasadena; University of California, Berkeley, and the University of Southern California, Los Angeles, is sponsoring a National Air Pollution Symposium at the Huntington Hotel, Pasadena, November 10-11. The four sessions of the symposium will be on the subjects: "Technics of Sampling and Analysis," "Sources and Control of Air-Borne Matter," "Meteorologic Influences and Visibility" and "Biologic Effects of Air-Borne Matter." Louis C. McCabe, Ph.D., chief, Office of Air and Stream Pollution Prevention Research, U. S. Department of the Interior, Bureau of Mines, Washington, D. C., will speak on "National Trends in Air Pollution" at the luncheon on November 10, and W. B. Gibson, chairman, Business and Industrial Economics Department, Stanford Research Institute, will speak on "The Economics of Air Pollution" at the luncheon on November 11.

Southern Medical Association Meeting.—The Southern Medical Association will hold its forty-third annual meeting in Cincinnati November 14-17, under the presidency of Dr. Oscar B. Hunter, Washington, D. C. The Campbell-Kenton County Medical Society of Kentucky will be the host society. General headquarters will be at the Netherland Plaza Hotel. The scientific program will include: general sessions, clinical sessions, section meetings, scientific exhibits and medical motion pictures. Among many other speakers, from various parts of the nation, will be the following officers of the American Medical Association: Dr. Ernest E. Irons, Chicago, president, will address the general session Wednesday evening on "The Deception of Nationalized Medicine," and Dr. Elmer L. Henderson, Louisville, Ky., president-elect, will discuss "Management of the Acute Gallbladder" before the general session Monday afternoon. The motion picture "They Also Serve," prepared by the American Medical Association, will be presented. The program of entertainment includes the president's reception and a golf tournament at the Fort Mitchell Country Club, Fort Mitchell, Ky., and the annual trap and skeet-shooting tournament at the Ryland County Club, Covington, Ky. Various other medical associations will hold their annual meeting during this period.

Program to Produce Psychiatric Films.—At a luncheon meeting of the New York Film Council, October 13, Dr. George Stevenson, president, American Psychiatric Association, announced a program involving an initial expenditure of $250,000 to give the public authoritative films dealing with psychiatry and related subjects. The program will be directed by the Mental Health Film Board, whose newly appointed members are:

Dr. Kenneth Appel, chief, Neuro-Psychiatric Clinic, Pennsylvania Hospital.
Dr. Leo H. Bartemeier, president, International Psychoanalytic Society.
Dr. Leona Baumgartner, Children's Bureau, Federal Security Agency.
Dr. Carl Binger, editor, *Psychosomatic Medicine.*
Dr. Joseph M. Bobbitt, clinical psychologist, National Institute of Mental Health.
Dr. M. Ralph Kaufman, president, American Psychoanalytic Association.
Dr. Thomas A. C. Rennie, associate professor of psychiatry, Cornell University Medical College.
Dr. Howard P. Rome, Mayo Clinic.
Dr. Leon Saul, head, Department of Preventive Psychiatry, University of Pennsylvania School of Medicine.

Dr. Stevenson said that the film board was developed to meet the needs for effective materials giving the public insight into the emotional problems of everyday life. The film program was made possible by the cooperation of leaders in mental health in thirteen states. Mr. Robert Anderson, who produced the psychiatric films "Feeling of Rejection" and "Feeling of Hostility," for the Canadian National Film Board, will be the film officer of the new board. Mr. Anderson said, "It is hoped that seven films will be in production before Christmas and that they will be available for theatrical and nontheatrical distribution by spring. Tentative subjects which are being explored include Mental Health of the Aging, Mental Health in Education, Child Guidance Clinics, and Parent-Child Relationships." The thirteen states participating in the plan are: California, Connecticut, Delaware, Illinois, Iowa, Maryland, Michigan, Nevada, North Carolina, Oklahoma, Puerto Rico, Rhode Island and South Carolina.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the period indicated has been received from the National Office of Vital Statistics, U. S. Public Health Service.

	Week Ended			Jan. 1 to	
Division and State	Oct. 15, 1949	Oct. 16, 1948	Median, 1944-1948	Oct. 15, 1949	Oct. 15, 1948
New England States					
Maine	8	1	2	419	37
New Hampshire	..	..	1	177	18
Vermont	10	..	1	120	20
Massachusetts	50	9	27	1,609	171
Rhode Island	12	..	1	140	7
Connecticut	19	5	8	524	102
Middle Atlantic States					
New York	182	66	68	4,782	1,211
New Jersey	64	42	26	1,240	658
Pennsylvania	33	29	29	659	611
East North Central States					
Ohio	47	38	38	1,552	1,008
Indiana	43	12	12	937	340
Illinois	79	74	48	2,589	951
Michigan	81†	24	24	2,456†	571
Wisconsin	26	57	49	904	460
West North Central States					
Minnesota	23	79	25	1,676	1,026
Iowa	37	61	34	1,006	896
Missouri	27	21	17	1,203	276
North Dakota	7	4	2	435	110
South Dakota	10	66	2	333	347
Nebraska	21	50	10	545	630
Kansas	24	10	5	645	271
South Atlantic States					
Delaware	..	1	1	38	123
Maryland	15	10	7	199	89
District of Columbia	7	7	6	89	112
Virginia	11	22	12	286	491
West Virginia	5	4	4	315	139
North Carolina	8†	43	10	207†	2,331
South Carolina	3	8	5	97	338
Georgia	8†	4	2	183†	201
Florida	5	8	8	217	231
East South Central States					
Kentucky	21	7	7	555	179
Tennessee	12	12	8	464	331
Alabama	9	6	1	221	189
Mississippi	6	1	1	302	140
West South Central States					
Arkansas	9†	4	4	903†	130
Louisiana	4	8	..	208	133
Oklahoma	29	3	3	1,162	333
Texas	36	32	20	2,031	1,552
Mountain States					
Montana	4	5	5	80	60
Idaho	16	1	3	412	98
Wyoming	..	..	1	101	68
Colorado	31	6	3	582	102
New Mexico	16	4	2	178	69
Arizona	..	5	3	141	123
Utah	19	2	2	215	76
Nevada	2	2	..	15	6
Pacific States					
Washington	21	26	14	506	259
Oregon	33	9*	8	236	140*
California	74	234	30	1,989	3,746
Total	1,207†	1,122*	...	35,943†	21,510*
Median, 1944-1948	....	.....	711	16,134	

* Current corrections made in cumulative totals.

† Deductions: Michigan, 1 case week ended September 3 and 2 cases week ended October 7; North Carolina, 1 case week ended October 1; Georgia, 1 case week ended September 10; Arkansas, 1 case week ended August 6.

CORRECTION

Dosage of Morphine.—In the paper entitled "Acute Craniocerebral Trauma" in The Journal, Oct. 8, 1949, page 373, the sentence beginning in the ninth line from the bottom of the left hand column should read: "In addition to these physical measures small doses of morphine sulfate (1/8 to 1/12 grain [8 to 5 mg.]) given every two hours are sometimes effective in lowering high temperatures."

Marriages

Andrew B. Stuart, Central Islip, N. Y., to Miss Irene Spanos of Rockville Centre, recently.

William Colbert Adamson, Philadelphia, to Miss Katherine King of Bristol, Tenn., August 5.

Frank M. Heifetz, Lowell, Mass., to Miss Shirley I. Newman of Brookline, August 7.

Harry H. Haddon Jr., to Miss Mary Elizabeth Duck, both of Philadelphia, July 23.

Deaths

Rosco Genung Leland, formerly director of the Bureau of Medical Economics of the American Medical Association, died at his home in Chicago, October 17, aged 64, of acute coronary occlusion. Dr. Leland was born near Mendon, Mich., June 17, 1885. After his preliminary education at Kalamazoo College and the University of Michigan, he received an M.D. degree from the University of Michigan Department of Medicine and Surgery, in 1909. He became assistant in obstetrics and gynecology at his alma mater. He practiced medicine in East Leroy, Mich., from 1910 to 1914, and at Kalamazoo, where he served also as health officer. During World War I he went overseas with the thirty-second division, C. O., Camp Hospital, 50, Tonnerre, France. On returning to the United States in May 1919, after having received two promotions in France, he remained in the service as surgeon to the First R.O.T.C. Infantry Camp, Camp Custer, Mich. After returning to civil life, Dr. Leland joined the Ohio State Health Department, serving as chief of the division of hygiene and later became executive secretary of the Toledo Public Health Association. Dr. Leland was invited to join the staff of the American Medical Association as assistant director of the Bureau of Health and Public Instruction. In 1931 he became director of the newly formed Bureau of Medical Economics. In 1940 he was directed to assume charge of a medical preparedness study involving the nature, location and quantity of medical personnel in the event of war. During World War II he was appointed a supervisor of the consultant office in the headquarters of the American Medical Association for Procurement and Assignment Service for Physicians, Dentists and Veterinarians and a member of the Health and Medical Committee of the Selective Service System. Dr. Leland was a fellow of the American Public Health Association, a member of the Royal Economic Society of England, the American Economic, American Statistical and National Education associations, Ohio State Medical Association and the American Medical Association.

Ernest Edward Shaw ⊕ Indianola, Iowa; born in Mitchelville, Iowa, Aug. 4, 1893; State University of Iowa College of Medicine, Iowa City, 1920; in 1949 member of the House of Delegates of the American Medical Association; past president of the Warren County Medical Society; president of the Iowa section of the American Academy of General Practitioners; formerly vice president of the Iowa Clinical Medical Society; member of the Iowa Heart Society; served during World War II; member of the city council; affiliated with the Iowa Methodist, Iowa Lutheran and Mercy hospitals in Des Moines; member of the board of trustees of the Simpson College; on the editorial board of the *Journal of the Iowa State Medical Society;* died August 27, aged 56, of coronary thrombosis.

Russell Brooks Bailey ⊕ Wheeling, W. Va.; born in Weston, W. Va., Oct. 17, 1898; University of Cincinnati College of Medicine, 1922; recently elected president of the West Virginia State Medical Association to assume duties Jan. 1, 1950; member of the council of the West Virginia State Medical Association; president of the West Virginia Cancer Society, director of the American Cancer Society and chairman of the state board of health; specialist certified by the American Board of Surgery; member of the Southeastern Surgical Association; fellow of the American College of Surgeons; affiliated with Ohio Valley General Hospital in Wheeling and Reynolds Memorial Hospital, Glendale; died September 15, aged 51, of coronary occlusion.

Donald Charles Tulloch, Albany, N. Y.; born in Syracuse, Dec. 11, 1907; Syracuse University College of Medicine, 1931; M. P. H., Johns Hopkins University School of Hygiene and Public Health, 1945; assistant district state health officer, Albany District, 1945-1946; district state health officer, New York State Department of Health since 1946; part time local health officer of the town of Smithfield, from 1935 to 1944; instructor in preventive medicine and public health, Albany Medical College; member of the American Medical Association; served as president of the New York State Epidemiological Society; died in South Bethlehem, August 28, aged 41, of a cerebral tumor.

Thomas Krapfel Lewis ⊕ Merchantville, N. J.; born in Merchantville, N. J., Jan. 7, 1887; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the House of Delegates of the American Medical Association from 1941 to 1949; past president of the Medical Society of New Jersey, Camden County Medical Society and the Camden City Medical Society; fellow of the American College of Physicians; served overseas during World War I; affiliated with the Cooper Hospital in Camden; died in New Haven (Conn.) Hospital August 28, aged 62, of coronary infarction.

John Joseph Larkin Jr., Boston; Harvard Medical School, Boston, 1939; member of the American Medical Association and the College of American Pathologists; specialist certified by the American Board of Pathology; assistant professor of pathology at Tufts College Medical School; served in World War II from 1942 to 1945 as captain, later major, at Base Hospital 136 in England and France as chief of the pathologic laboratory; pathologist at the Holy Ghost Hospital in Cambridge, where he was in charge of cancer research, and St. Elizabeth's Hospital; died in Sterling, Mass., August 26, aged 35, of accidental drowning.

Catherine Strunk Amatruda, New Haven, Conn.; born in Ithaca, N. Y., March 4, 1903; Cornell University Medical College, New York, 1926; certified by the National Board of Medical Examiners; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; assistant professor of pediatrics (child study center), Yale University School of Medicine; associate pediatrician at the Grace-New Haven Community Hospital University Service; died in New Haven Hospital September 1, aged 46, of cerebral hemorrhage.

Jaques Cortelyou Rushmore, Stormville, N. Y.; Long Island College Hospital, Brooklyn, 1903; professor emeritus of clinical orthopedic surgery at his alma mater; member of the American Medical Association; fellow of the American College of Surgeons; served overseas during World War I; consultant on orthopedics at the Veterans Administration Hospital in Castle Point, Brooklyn Hospital, St. John's Hospital, Kings County Hospital and House of St. Giles the Cripple, all in Brooklyn; died September 3, aged 73, of heart disease.

Gonzalo Francis Alcazar, Hartford, Conn.; Universidad de la Habana Facultad de Medicina y Farmacia, Cuba, 1943; resident at the Hartford Hospital; died July 7, aged 29.

Jesse Peck Baird, Dyersburg, Tenn.; Homeopathic Medical College of Missouri, St. Louis, 1903; Barnes Medical College, St. Louis, 1904; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with the Baird-Brewer General Hospital; died July 6, aged 72.

Oskar Leonard Bertelson ⊕ Crookston, Minn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1900; an Associate Fellow of the American Medical Association; division surgeon for the Great Northern Railway; died July 14, aged 70, of uremia.

Hugh Franklin Bowers, Belleville, Ill.; St. Louis University School of Medicine, 1941; member of the American Medical Association; secretary treasurer of the Kaskaskia branch of the American Academy of General Practitioners; affiliated with St. Elizabeth's Hospital; died August 18, aged 33, of coronary thrombosis.

Arthur Curtis Branyon ⊕ Fayette, Ala.; Memphis (Tenn.) Hospital Medical College, 1903; consultant, McNease and Robertson Hospital; died August 24, aged 66, of carcinoma of the prostate with metastases to the bones.

Arnold Isaiah Bricker, Brooklyn; Long Island College Hospital, Brooklyn, 1947; certified by the National Board of Medical Examiners; resident at the Cumberland Hospital; died in August, aged 24.

Elmer H. Brubaker, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1896; member of the American Medical Association; formerly on the staff of the Methodist Hospital; at one time practiced in New Castle, Ind., where he was secretary of the Henry County Board of Health and county health officer; died August 22, aged 80, of congestive heart failure.

John Howard Bryant, North Hollywood, Calif.; Northwestern University Medical School, Chicago, 1903; for many years practiced in Galesburg, Ill., where he was on the staff of Galesburg Cottage Hospital; died August 13, aged 73, of coronary thrombosis.

Benjamin Oscar Burkey ⊕ Baltic, Ohio; University of Wooster Medical Department, Cleveland, 1911; served on the staff of the Union Hospital in Dover; died August 21, aged 64, of pulmonary edema.

Arthur Maitland Chatham ⊕ Cleveland; Western Reserve University Medical Department, Cleveland, 1905; affiliated with St. Alexis and St. Luke's hospitals; for many years active in Boy Scout work; died August 10, aged 71, of myocardial infarction.

⊕ Indicates "Fellow" of the American Medical Association.

Elmina Farquhar Cook, Los Angeles; Drake University Medical Department, Des Moines, 1888; at one time a medical missionary in Palestine; died August 6, aged 89, of carcinoma of the sigmoid colon

John Jesse Cooper, Cedartown, Ga.; Tennessee Medical College, Knoxville, 1893; member of the American Medical Association; served as councilman and mayor; many times elected to the state legislature as representative and senator; died in the Polk General Hospital August 5, aged 81, of heart failure.

Arthur Donald Cowdrick, Clearfield, Pa.; Medico-Chirurgical College of Philadelphia, 1909; member of the American Medical Association; affiliated with the Clearfield Hospital; died August 19, aged 62, of uremia.

Clement Francis Derezinski ⊕ Muskegon, Mich.; Loyola University School of Medicine, Chicago, 1937; lieutenant (jg) in the U. S. Navy during World War II; affiliated with the Mercy and Hackley hospitals; died August 19, aged 37, of bulbar poliomyelitis.

August Doerr ⊕ Milwaukee; College of Physicians and Surgeons of Chicago, 1896; affiliated with the Deaconess Hospital, where he died August 6, aged 77, of tabes dorsalis and cerebral hemorrhage.

James Lee Doughton, Sparta, N. C.; College of Physicians and Surgeons, Baltimore, 1893; died August 23, aged 79.

Talbot S. Duff, Cainsville, Mo.; Kansas City (Mo.) Medical College, 1899; member of the American Medical Association; served as health officer; died August 16, aged 71, of coronary disease.

William Taylor Elmore, Gainesville, Fla.; University of the South Medical Department, Sewanee, Tenn., 1904; member of the American Medical Association; served during World War I; died in the Veterans Administration Hospital, Lake City, August 7, aged 76, of arteriosclerosis and cerebral hemorrhage.

Archie Lewis Erwin, Nashville, Tenn.; University of Nashville Medical Department, 1905; member of the American Medical Association; served during World War I; affiliated with the Nashville General Hospital; died in Brentwood August 6, aged 67.

Willard Joshua Fenton, St. Petersburg, Fla.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1904; served during World War I; died August 21, aged 68, of heart disease.

John Winston Fowlkes ⊕ New York; University of Virginia Department of Medicine, Charlottesville, 1915; specialist certified by the American Board of Otolaryngology; served on the faculty of the New York University College of Medicine; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; affiliated with St. Luke's and Bellevue hospitals; died in Nantucket, Mass., August 9, aged 58, of coronary thrombosis and hypertension.

William Joseph Francis, East Rockaway, N. Y.; Cleveland Homeopathic Medical College, 1904; specialist certified by the American Board of Radiology; served during World War I; died August 7, aged 71.

Milton Blythe Galloway ⊕ Webster City, Iowa; Rush Medical College, Chicago, 1911; member of the American Society of Anesthetists; served as county coroner; died August 9, aged 68, of arteriosclerotic myocarditis.

Arthur Howell Gerhard, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1911; served overseas during World War I; formerly on the faculty of his alma mater; affiliated with the Pennsylvania, Episcopal and University hospitals and the Bryn Mawr (Pa.) Hospital; died August 29, aged 72.

Lawrence Gary Gould, Lombard, Ill.; Chicago Medical School, 1941; member of the American Medical Association; served *on the staff of the Memorial Hospital*, Elmhurst; died in Idaho Springs, Colo., in August, aged 36.

Charles Oscar Grimes, Sigourney, Iowa; Keokuk (Ia.) Medical College, 1895; died in St. Joseph's Hospital, Ottumwa, August 21, aged 76.

Meyer Hantman ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1931; specialist certified by the American Board of Dermatology and Syphilology; served overseas during World War II; assistant clinician, division of medicine at the Mount Sinai Hospital, where he died August 26, aged 41, of subarachnoid hemorrhage and congenital aneurysm of circle of Willis.

William Ralph Harder ⊕ Los Gatos, Calif.; University of California Medical School, San Francisco, 1928; member of the American Association of Industrial Physicians and Surgeons; affiliated with O'Connor Hospital, San Jose; died August 16, aged 50, of bilateral bronchopneumonia and acute gangrenous cholecystitis.

Louis Morris Harris ⊕ Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1912; formerly county coroner; died August 31, aged 58.

John Franklin Henderson, Oakland, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; member of the American Medical Association; served during World War I; died in Paris August 25, aged 68, of coronary occlusion.

Albert Edward Henwood, Mattawan, Mich.; Detroit Homeopathic College, 1905; served during World War I; died August 23, aged 71, of acute coronary occlusion.

Philip Launcelot Hill, Petersburg, Va.; Medical College of Virginia, Richmond, 1917; member of the American Medical Association; formerly a medical missionary in Korea; member of the city council and health officer of Colonial Heights; served as coroner of Chesterfield County and Colonial Heights; died in Petersburg Hospital August 8, aged 60, of cerebral hemorrhage.

Walter Bradley Hill, Long Beach, Calif.; University of Southern California Medical Department, Los Angeles, 1909; affiliated with the Seaside Memorial Hospital; died July 19, aged 74, of coronary thrombosis.

Arthur Fenwick Holding ⊕ Albany, N. Y.; Albany Medical College, 1901; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society and the American Radium Society; at one time on the faculty of Cornell University Medical College in New York and lecturer in roentgenology at his alma mater; served overseas during World War I; affiliated with the Memorial Hospital; died August 27, aged 72, of carcinoma of the esophagus.

Luther Talmadge Hollis ⊕ Kansas City, Mo.; University Medical College of Kansas City, 1896; an Associate Fellow of the American Medical Association; died in St. Joseph Hospital August 8, aged 77, of arteriosclerotic heart disease.

Ralph Holt, Paducah, Ky.; Barnes Medical College, St. Louis, 1899; for many years county physician; died in the Riverside Hospital August 11, aged 76, of hypertrophy of the prostate, cerebral vascular disease and pneumonia.

Samuel Reeder Huff ⊕ Eldred, Pa.; Medico-Chirurgical College of Philadelphia, 1908; died in the Bradford (Pa.) Hospital August 29, aged 65.

Eugene B. Hultz, Hill City, S. D.; Beaumont Hospital Medical College, St. Louis, 1900; St. Louis University School of Medicine, 1904; member of the American Medical Association; died July 2, aged 71, of cerebral hemorrhage.

Norman William Ingalls, Cleveland Heights, Ohio; Western Reserve University Medical Department, Cleveland, 1905; formerly associate professor of anatomy at his alma mater; member of the American Association of Anatomists; died July 27, aged 68, of coronary thrombosis.

Thomas Arthur Johnson ⊕ Rockford, Ill.; Rush Medical College, Chicago, 1911; certified by the National Board of Medical Examiners; member of the International College of Surgeons; fellow of the American College of Surgeons; affiliated with the Swedish American Hospital, where he died August 7, aged 63, of coronary thrombosis.

Karl Esterly Jones Jr., Pompeii, Mich.; Northwestern University Medical School, Chicago, 1948; interned at the Cook County Hospital in Chicago; died in August, aged 27, of poliomyelitis.

Armand George Kersten, Detroit; Detroit College of Medicine and Surgery, 1914; member of the American Medical Association and the American Urological Association; fellow of the American College of Surgeons; served during World War I; affiliated with St. Mary's Hospital, where he died August 30, aged 58, of carcinoma of the colon.

Leon T. Leach, Indianapolis; Medical College of Indiana, Indianapolis, 1901; died in St. Vincent's Hospital August 15, aged 73, of essential hypertension and cerebral hemorrhage.

Howard Taylor Lewis ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1906; consulting surgeon at Lutheran Hospital, where he died August 24, aged 69.

Frank Levinson, Baltimore; University of Maryland School of Medicine, Baltimore, 1911; died in the Church Home and Hospital recently, aged 59, of cerebral hemorrhage and arteriosclerosis.

Nelson Hiram Lewis, Benkelman, Neb.; National Medical University, Chicago, 1901; Milwaukee Medical College, 1905; died July 21, aged 80, of cerebral hemorrhage.

Alonzo Conduit Lillard, St. Joseph, Mo.; University of Missouri School of Medicine, Columbia, 1898; died August 22, aged 75, of coronary occlusion.

Young Cleveland Lott ⊕ Miami, Fla.; University of Louisville (Ky.) Medical Department, 1912; member of the National Gastroenterological Association; served during World Wars I and II; formerly on the staff of the Jackson Memorial Hospital; died August 22, aged 60, of nephrosclerosis with uremia.

Willis Austin McCall ⊕ Butler, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1904; served during World War I; died in the Jameson Memorial Hospital, New Castle, July 27, aged 70, of complications following a fall.

William E. MacLaughlin, Glendale, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1896; member of the American Medical Association; served during World War I; died August 14, aged 77, of bronchogenic carcinoma of the right lung.

George Erland Malmgren ⊕ Los Angeles; University of Minnesota Medical School, Minneapolis, 1927; at one time affiliated with the Mayo Foundation in Rochester, Minn.; on the staffs of the Hospital of the Good Samaritan and the Cedars of Lebanon Hospital, where he died August 24, aged 47, of spasmodic torticollis and respiratory failure.

William Judson Martin ⊕ Kokomo, Ind.; St. Louis College of Physicians and Surgeons, 1903; past president and secretary of the Howard County Medical Society; served as city and county health officer; past president of the Indiana Tuberculosis Association and the Howard County Tuberculosis Association, which he had founded; died in St. Joseph Hospital August 24, aged 79, of cerebral hemorrhage.

Laurent Obid Miller, Grand Chenier, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1908; died August 18, aged 68, of heart failure.

Morrill Justin Morris, Seattle; Jefferson Medical College of Philadelphia, 1915; member of the American Medical Association; member of the Pacific Coast Oto-Ophthalmological Society; served during World War I; died in Salina, Utah, August 25, aged 58.

Walter Franklin Mylin ⊕ Willow Street, Pa.; Jefferson Medical College of Philadelphia, 1903; died August 2, aged 71, of carcinoma of the prostate.

A. Victor Nasatir ⊕ Los Angeles; University of Illinois College of Medicine, Chicago, 1924; fellow of the American Public Health Association; member of the American Association of Industrial Physicians and Surgeons; director of the industrial hygiene division of the city health department; served during World War II; formerly affiliated with the Cedars of Lebanon Hospital and the Los Angeles County General Hospital; at one time lecturer at the College of Medical Evangelists; died August 5, aged 51, of coronary thrombosis.

Fritz Neuhoff ⊕ St. Louis; St. Louis Medical College, 1887; an Associate Fellow of the American Medical Association; associate professor of internal medicine at the St. Louis University School of Medicine; affiliated with St. Mary's Group of Hospitals; died in the Firmin Desloge Hospital in August, aged 85.

Soren Svalheim Norsman, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1900; died August 13, aged 85, of cerebral hemorrhage.

William Asa Onderdonk, Louisville, Ky.; Kentucky School of Medicine, Louisville 1903; member of the American Medical Association; veteran of the Spanish-American War; served on the staffs of St. Joseph Infirmary, SS. Mary and Elizabeth Hospital and the Deaconess Hospital; died August 16, aged 85, of cerebral hemorrhage.

Pedro Nolasco Ortiz, New York; Boston University School of Medicine, 1919; served in the Insular Health Department as chief of the communicable disease bureau and later as health commissioner; visiting professor at the School of Tropical Medicine in San Juan, Puerto Rico, from 1926 to 1930 when he lectured at the Harvard School of Public Health in Boston; affiliated with the Mother Cabrini Memorial Hospital, Park East Hospital and the Mount Sinai Hospital, where he died August 4, aged 60, of peritonitis.

James Bruce Ozier, Amarillo, Texas; Vanderbilt University School of Medicine, Nashville, 1900; member of the American Medical Association; died recently, aged 72, of coronary occlusion.

Frank O. Richards, Santa Ana, Calif.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; died recently, aged 79, of arteriosclerotic heart disease.

Robert Elmer Schade, Milwaukee; University of Wisconsin Medical School, Madison, 1928; member of the American Medical Association; served as an examiner for the Selective Service Board during World War II; died recently, aged 45, of fracture of the right clavicle and pulmonary embolism.

Charles Krauth Shanor ⊕ Sewickley, Pa.; University of Pittsburgh School of Medicine, 1909; fellow of the American College of Surgeons; affiliated with the Sewickley Valley Hospital; served during World War I; died July 19, aged 66, of carcinoma of the larynx with metastasis to the lungs.

Baxter Hopewell Sigler, Owensboro, Ky.; University of Tennessee College of Medicine, Memphis, 1918; member of the American Medical Association; formerly an officer in the regular U. S. Navy; affiliated with Our Lady of Mercy Hospital and the Owensboro-Daviess County Hospital, where he died July 28, aged 57, of coronary occlusion.

Ralph Douglas Skinner, New York; Baltimore Medical College, 1905; affiliated with the Knickerbocker Hospital, where he died recently, aged 71, of cerebral hemorrhage.

Paul Carrington Spangler ⊕ Princeton, W. Va.; College of Physicians and Surgeons, Baltimore, 1912; served on the staff of the Bluefield (W. Va.) Sanitarium; died recently, aged 61, of cardiac aneurysm following coronary occlusion.

Harry Vernon Swick, Erie, Pa.; Temple University School of Medicine, Philadelphia, 1937; member of the American Medical Association; resident in urology at the St. Vincent's Hospital; aged 36; drowned in Lake Erie August 1 as he slipped from his boat while dropping anchor on a fishing trip.

Thomas Francis Tierney, Hudson, Mass.; Baltimore Medical College, 1901; member of the American Medical Association; served during World War I; affiliated with the Clinton (Mass.) Hospital and Marlborough Hospital, Marlboro; died in Wells Beach, Maine, July 24, aged 72, of heart disease.

John Selby Vermillion, Maize, Kan.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Kan., 1904; for many years city treasurer and treasurer of the school board; member of the American Medical Association; died in St. Francis Hospital, Wichita, August 9, aged 72, of coronary insufficiency and Parkinson's disease.

Donald Alfred Waag, Dayton, Ohio; Western Reserve University School of Medicine, Cleveland, 1943; member of the American Medical Association; served during World War II; affiliated with Miami Valley and Good Samaritan hospitals; died July 29, aged 37, of carcinoma.

Wilson Hervey Walters, Fairfield, Maine; Cleveland Homeopathic Medical College, 1898; member of the American Medical Association; affiliated with Sisters' Hospital in Waterville; died July 31, aged 75, of hemiplegia.

Della May Weintraub, New York; New York Homeopathic Medical College and Flower Hospital, New York, 1921; member of the American Medical Association; died July 22, aged 53.

Sidney Colton Williams, Goodman, Miss.; University of Tennessee College of Medicine, Memphis, 1913; served during World War I; formerly affiliated with the Veterans Administration in Jackson and Pittsburgh; died August 1, aged 64, of coronary heart disease.

William Carroll Winstandley ⊕ New Albany, Ind.; University of Louisville (Ky.) Medical Department, 1896; past president of the Floyd County Medical Society; served during World War I; on the staff of St. Edward's Hospital, where he died August 28, aged 77, of coronary occlusion.

Louis Wolfson, Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; formerly police surgeon; died in Mount Sinai Hospital August 10, aged 74.

Alexander Francis Wright, Dundee, N. Y.; Trinity Medical College, Toronto, Canada, 1901; member of the American Medical Association; an officer overseas during World War I; served as president of the Dundee Chamber of Commerce and as mayor; on the staff of the Soldiers and Sailors Memorial Hospital in Penn Yan; died in the Arnot Ogden Hospital in Elmira August 21, aged 78, of sarcoma of the mediastinum.

Foreign Letters

BELGIUM

(From Our Regular Correspondent)

Sept. 20, 1949.

Physiology and Pathology of Bones and Joints

The Belgian Foundation for the Study of the Physiology and Pathology of Bones and Joints has been created to stimulate experimental research in physiology and pathology of the osteoarticular system. It will aim to increase the systematic study of the symptoms, diagnosis, clinical aspects and therapy of diseases of the bones, joints, muscles and locomotor apparatus in general; coordinate and disseminate exchanges of information and promote discussions between the laboratory and the clinical staffs, and attempt to find means to aid, support, encourage and reward the research workers. This association hopes to establish connections with all investigators who are interested in the same problems and to make efforts to aid them in proportion to the means at its command.

Legislation to Combat Alcoholism

Belgian legislation concerning the retail sale of alcohol is rather unusual. Nobody is permitted to consume drinks with an alcoholic content in excess of 15 per cent in a public place, such as a café, bar or restaurant. Also, one can neither buy nor carry a quantity of less than 2 liters. Because of the high taxes and other fees involved in this transaction, 2 liters involves considerable expense. This legislation, which was conceived by Minister Van der Velde, had had favorable results in combating alcoholism. Unfortunately, since the war the application of this law has not been carried out with the same strictness as was the case before 1939, and the results of this laxity are becoming evident. The Belgian Society of Neurology and the Society of Mental Hygiene of Belgium have observed an increase in alcoholic psychosis. The Royal Academy of Medicine, at the suggestion of its president, Jules Bordet, has expressed the wish, supported by the Belgium Society of Mental Hygiene, that the legislation of 1919 be strictly enforced.

Instruction in the International Medical Code

The Minister of Public Education, Monsieur Mundeleer, met with the rectors of the four universities of the country and directed that their faculties investigate the possibility of creating a course of instruction on the international medical code in each of the universities. This is in response to an international movement to organize the medical profession to avoid recurrence of the atrocities committed during World War II. Several important medical organizations, such as the World Medical Association and the academies of medicine of Paris and Brussels, have made similar efforts. Dr. Voncken, secretary-general of the International Committee of Military Medicine and Pharmacology, will publish a work concerning this important question, entitled "Attempts at Codification of International Medical Law."

Shortening of the Femur

Continuing the work of the surgical school of Lambotte in Antwerp, which has to his credit technics of great originality and satisfactory results, Dr. Verbrugge presented before the Surgical Society of Belgium a preliminary note on his method of shortening of the femur. To reestablish equality of the two legs the surgeon can either shorten the healthy leg or lengthen the injured leg. The radical intervention consists in shortening the healthy femur. The operation is most satisfactorily done when the patient is between 15 and 20 years old (vigor of bone regeneration, aptitude to muscular readaptation; ease of articular recuperation). Shortening to the extent of 15 to 18 cm. can be carried out.

The operation which Verbrugge presents consists of sectioning the femur at the base of the great trochanter, resection of a part of the lower end, freshening of the circumference of the end of the lower fragment and then insertion of it into the freshened cavity of the superior epiphysis and fixation with metal.

The advantages of his method, he said, are absence of shock and muscular tearing, rapidity of callus formation and the possibility of correction of the axes.

Surgical Treatment of Cutaneous Cancers

In a paper presented to the Belgium Society of Surgery, Cogniaux studied the approach in cases of cutaneous epithelioma and tried to indicate the differential indication for irradiation therapy and for surgery. Irradiation cures the larger number of cutaneous epitheliomas of stage I, for only 8 per cent of these patients succumb as a result of these cancers. However, the results are much less favorable in cases of infiltrating epitheliomas (stage II) or in those which have received irradiation and have relapsed (stage III): in these two categories the mortality rate is about 60 per cent.

The spinocellular, basocellular or mixed histologic types do not seem to be the cause of this, the radiosensitivity of cutaneous epitheliomas being practically in proportion to the employed irradiation.

A clinical study of cutaneous epitheliomas considering the tumor and the area on which it grows will make it possible to determine in advance the lesions which will be refractory to irradiation and which, therefore, must be treated surgically. Cutaneous epitheliomas which are refractory to irradiation can be operated on successfully. Electrosurgery, particularly electrocoagulation, is the method of choice. Exeresis by coagulation resection is employed in so far as is possible; when it appears impossible, coagulation in situ is used to follow the extensions of the tumor.

Since healing by primary intention is generally impossible, it is advisable to close the cutaneous gap by means of free grafts or by plastic methods. Cancers of the vulva require the same therapeutic principles. Electrosurgery is the method of choice; it may be advisable to combine it with radiotherapy, applied to the chain of inguinal lymph nodes.

The nevocarcinomas and the cutaneous sarcomas must be operated on; their resistance to radium treatment depends not on the region in which the tumor is found but on the histologic structure. Extensive electrosurgical treatment eventually combined with radium therapy gives satisfactory results (58 per cent of five year cures), provided the cancer has not yet metastasized. The radiosurgical treatment of cutaneous cancers requires constant cooperation between surgeons and radiologists.

SWITZERLAND

(From Our Regular Correspondent)

GENEVA, Aug. 30, 1949.

Second World Assembly for Mental Health

The Second World Assembly for Mental Health took place in Geneva Aug. 22-27, under the chairmanship of Dr. Rees (London). Dr. Vollenweider (Switzerland) gave the message of welcome from the Swiss government; Dr. Rees discussed the chief aims of the World Federation for Mental Health. The problems of mental prophylaxis need the application of a widespread science through the system of team work. Mental health must be considered as a sort of specialty in the realm of psychiatry, psychology and sociology. It should be possible to synthesize the different professional aims.

The assembly chose as its new chairman Dr. André Repond, director of the Clinic of Malévoz (Switzerland). Dr. Repond is a pioneer of mental health in Switzerland, where he founded the first medicopedagogic center, on the model of the American child guidance clinics. In his speech, Dr. Repond emphasized that psychiatrists and psychologists have not yet learned how to produce objective self interest in patients, to permit understanding and control of self in accordance with the principles of modern psychology.

The assembly heard reports on the different aspects of mental hygiene in Switzerland and on the collaboration of the World Federation for Mental Health and the specialized agencies of the United Nations. Dr. Brock Chisholm and Dr. Hargreaves discussed the relations which should exist between the World Federation for Mental Health and the World Health Organization in Geneva in order to allow these two organizations to cooperate in the prevention of crimes, in the study of juvenile delinquency, in the psychologic study of orphans and in the fight against drug addiction. Another problem, an important one and far too often neglected, is the study of mental health in rural districts, in industry and among students.

On the day of relaxation which had been arranged, the members of the conference were driven in coaches to the Clinic of Malévoz which has become the center of most of the social and health activities of the canton of Valais; this canton is formed of many small villages in deep valleys, and the study of the psychologic needs of the population demands a special technic. The conference members were heartily welcomed by the heads of this clinic.

The last day of the program was given over to reports and resolutions presented by study groups which had been organized at the beginning of the assembly and which concerned the following problems: professional teaching of mental health; mental hygiene of the student; education of the public in mental health; mental health in rural districts; mental health aspects of education; religion and mental health; international relations and mental health; psychologic problems of displaced persons, and scientific research in mental health. A well organized teaching system is needed to give training in the basic concepts of mental health. Several members proposed the creation of an international institute of mental health and human relations with a provisional center in Lausanne (Switzerland). The third World Assembly for Mental Health will take place in Paris in 1950.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Aug. 4, 1949.

Causes of Neonatal Death

Dr. Constantino Mignone of the Department of Pathology and Dr. J. Soares Bicudo of the Department of Obstetrics, School of Medicine, University of São Paulo, have reported a postmortem study of 200 consecutive cases of neonatal death at the Hospital das Clinicas. In eleven instances the cause of death could not be determined. In the remaining 189 cases the causes of death were: prematurity 47, pneumonia and other infections 57, syphilis 18, aspiration and asphyxia 20, obstetric trauma 26, congenital malformations 11, and other causes 10. Under obstetric trauma were listed 17 cases of intracranial hemorrhage, 8 cases of fracture of the parietal bone and 1 case of rupture of the liver. Deaths from congenital malformations included 5 instances of heart defects, 2 of meningoencephalocele, and 1 each of congenital diaphragmatic hernia, anencephaly, omphalocele and esophageal atresia. In "other causes" were included 3 cases of erythroblastosis, 3 cases of congenital debility and 1 case each of acute dyspepsia, ileus paralyticus, hemoperitoneum of undetermined cause and accident during transfusion.

Of the 189 infants the causes of whose death could be ascertained, 72 died on the first day of life, 67 died from the second to the seventh day and 50 from the eighth to the thirtieth day. The causes of death of the 72 who died on the first day were: prematurity 29, pneumonia and other infections 7, syphilis 7, aspiration and asphyxia 15, obstetric trauma 12, malformation 1 and other cause 1.

ARGENTINE

(From Our Regular Correspondent)

Buenos Aires, Oct. 14, 1949.

Action of Sexual Steroids on Experimental Diabetes

Drs. J. T. Lewis, V. G. Foglia and R. R. Rodríguez, at a meeting of the Argentine Society of Biology, reported the results from the daily injection for six months of steroids on diabetes produced experimentally in the white rat by the surgical ablation of 95 per cent of the pancreatic mass. Estrogens (estradiol, estrone, diethylstilbestrol, dienestrol, ethinylestradiol and ethinyltestosterone) exerted an intense preventive action. Cholesterol had a slight preventive effect. Androgens accelerated the appearance of diabetes and made it severer. Ingle observed that daily injection of diethylstilbestrol produced at the beginning glycosuria and hyperglycemia in half the rats deprived of 95 per cent of the pancreas with forced feeding. Dr. R. R. Rodríguez (who read this paper at a meeting of the Argentine Society of Biology, Aug. 4, 1949) found that both hyperglycemia and glycosuria were transitory; after some weeks, glycosuria disappeared and the blood sugar level became normal. These rats were evidently protected against diabetes, since the control animals deprived of 95 per cent of the pancreas which were not given diethylstilbestrol became diabetic in the same period of time.

Estrogens produced pronounced hyperplasia in the islands of Langerhans of the pancreas of the rat, especially the beta cells, with typical granulations, and an increase of the weight of hypophysis and adrenals. There also was observed hyperplasia of the islands of Langerhans and severe lesions in the beta cells of rats that were given injections of androgens. With local implantation of estradiol in the pancreas, the hyperplasia was more intense near the pellet but existed in the whole organ. This was demonstrated in cats, rats and dogs (Drs. A. F. Cardeza and R. R. Rodríguez, Argentine Society of Biology, meeting of October 6).

Argentine Congress of Surgery

At the twentieth Argentine Congress of Surgery in Buenos Aires, October 3-6, the subjects reported and discussed were: bronchiectasia, surgical treatment in adults (Dr. L. Langer, Córdoba, Argentina) and in children (Dr. J. M. Pelliza, Buenos Aires); lumbar sciatica (Dr. G. J. Dickmann, Buenos Aires); thrombophlebitis and phlebothrombosis (W. Chifflet, Montevideo, Uruguay, and J. A. Ferreira, Buenos Aires). Dr. G. Dickmann, neurosurgeon, reported results of the surgical treatment of 120 patients with severe and persistent lumbar sciatica of intervertebral disk origin. Dr. J. Valls (orthopedist) and Dr. J. Diez (general surgeon) discussed the subject.

Personals

Dr. J. C. Ahumada, professor of gynecology, and Dr. T. Padilla, professor of clinical diagnosis, were named members of the National Academy of Medicine of Buenos Aires.

Deaths

Dr. Antonio Cetrángolo, a well known Argentine phthisiologist, died in Buenos Aires, September 21. He was director of Santa María and Ascochinga sanatoriums and of the "Hospital Nacional Central" for tuberculosis patients and president of the Argentine Society of Phthisiology.

Correspondence

NONPARALYTIC POLIOMYELITIS AND MUMPS

To the Editor:—Kilham, Levens and Enders (Nonparalytic Poliomyelitis and Mumps Meningoencephalitis, J. A. M. A. 140: 934 [July 16] 1949) call attention to the difficulty of making an unequivocal diagnosis of nonparalytic poliomyelitis and state that the diagnosis can be made only on circumstantial evidence. In their paper they reported on 17 patients who were considered to have nonparalytic poliomyelitis during the summer and fall of 1948. Six of these subsequently were proved by serologic tests to have had mumps meningoencephalitis. The correct diagnosis in the 6 patients was made with laboratory procedures worked out by Enders and his associates (Kane, L. W., and Enders, J. F.: Immunity in Mumps: III. The Complement Fixation Test as an Aid in the Diagnosis of Mumps Meningoencephalitis, *J. Exper. Med.* **81**: 137, 1945. Robbins, F. C.; Kilham, L.; Levens, J. H., and Enders, J. F.: The Antihemagglutinin Test in the Diagnosis of Infections by the Mumps Virus, *J. Immunol.* **61**: 235, 1949). Kilham, Levens and Enders' report illustrates the value of the newer serologic and virus studies in patients who have a nonpurulent spinal fluid. However, their paper gives the impression that a clinical differentiation between mumps meningoencephalitis and nonparalytic poliomyelitis is not possible. Unfortunately, the authors do not include the case histories of the patients whose clinical diagnosis of poliomyelitis was incorrect.

There are many differences between mumps meningoencephalitis and nonparalytic poliomyelitis: The seasonal incidence of mumps in the United States, as tabulated by the United States Public Health Service, is greatest in the spring of the year, and although sporadic cases do occur in the late summer these are unusual. Mumps is prevalent annually in most localities. Poliomyelitis, on the other hand, makes its appearance somewhat later in the year, the exact time varying in different localities. The seasonal incidence is the same in a given locality whenever the disease appears, and a heavy outbreak in two successive years in a given area is unusual. There is little poliomyelitis after an epidemic subsides. Thus the two diseases actually do not occur simultaneously, though conceivably the end of a mumps outbreak may coincide with the onset of an epidemic of poliomyelitis.

The statement is made by Kilham, Levens and Enders, "No essential difference was observed between the clinical signs and symptoms presented by the two groups of patients." This is at variance with the usual findings in mumps meningoencephalitis and nonparalytic poliomyelitis. A careful history of exposure to mumps should be sought, and a daily inspection of the patient, including palpation of the salivary glands and testes, is important. Cases of mild disease do occur, but usually the patient with mumps meningoencephalitis is drowsy, if not unconscious, and resembles a patient with one of the forms of bacterial meningitis. He is often treated with sulfonamide preparations or antibiotics because the condition which he presents is so severe that it is imprudent to withhold therapy pending an accurate laboratory diagnosis. The patient with nonparalytic poliomyelitis, on the other hand, may be somewhat drowsy, but can be roused and presents a number of positive symptoms and signs which are not found in patients with mumps. These include inability to flex the spine, called originally by Aycock, I believe, "the audible sign." The general body pains, hyperesthesias and anxiety common in poliomyelitis are absent in mumps. There are also numerous other minor differences between poliomyelitis and mumps involvement of the central nervous system, such as the frequent high spinal fluid leukocyte count in mumps.

It must be remembered that the only way in which a positive clinical diagnosis of poliomyelitis can be made is with the appearance of definite muscle weakness or bulbar involvement. These do not occur (or rarely) in mumps. Even the isolation of poliomyelitis virus from the stool does not necessarily prove that the patient has or has had the clinical disease, for it is conceivable that patients with mumps may be carriers of poliomyelitis virus just like anyone else during an epidemic. The authors infer that, because a low recorded incidence of the paralytic form of poliomyelitis occurred during 1948 in Massachusetts, one might therefore explain the unusually high incidence of mumps meningoencephalitis in their patients with supposed nonparalytic poliomyelitis. If this inference were correct, one would also expect large numbers of diagnostic errors in years when paralytic poliomyelitis is prevalent. This is not the case. The authors' point is well taken, however, that in nonepidemic years one should hesitate to make a diagnosis of nonparalytic poliomyelitis without due consideration of other possibilities, such as mumps meningoencephalitis. One cannot agree with the statement, "Without a definite history of this sort [that is, contact with a patient with poliomyelitis] the mere occurrence of aseptic lymphocytic meningoencephalitis during the late summer and early fall, when poliomyelitis may be epidemic, is insufficient to warrant even a tentative diagnosis of the nonparalytic form of the disease." It is more prudent for the physician to consider the most likely diagnosis—poliomyelitis—even without a history of contact, for even in epidemic years, history of direct exposure is obtained in but a small percentage of patients with poliomyelitis. The differences between the two diseases are being pointed out in order that proper therapeutic measures, such as suction apparatus and a respirator, may be at hand when a patient has nonparalytic poliomyelitis, for poliomyelitis is a treacherous disease which may progress rapidly and requires prompt treatment to prevent fatal termination.

ALFRED E. FISCHER, New York.

OXYGEN REQUIREMENTS FOR PATIENTS TRAVELING BY AIR

To the Editor:—Physicians often are asked for instructions and advice to patients who are planning air travel. Most medical men are familiar with the facilities provided in modern transport aircraft, but startling instances of misunderstanding by patients or physicians sometimes occur. Recently, for example, an elderly woman boarded a transcontinental plane with a nurse and her oxygen tank. One of her astonished fellow travelers reported, "The nurse continually manipulated the tank, which was 3½ feet high and at least a foot in diameter, with plyers and screw drivers."

The cabins of modern transport planes which travel at altitudes above 10,000 feet are pressurized to simulate atmospheric conditions at 8,000 to 10,000 feet; over many routes the cabin pressure is maintained equivalent to lower altitudes of 5,000 to 6,000 feet. Most air lines will provide supplementary oxygen for emergency use should the passenger request it; this is supplied on a fixed diaphragm basis and at a liter per minute rate which compensates for the deficit of atmospheric oxygen cabin altitude or, in nonpressurized planes, at the altitude at which the plane is flying. Maximum delivery is generally 2.25 liters per minute, which would be enough to provide for most persons an oxygen concentration considerably in excess of that at sea level, even when the cabin pressure is at the 10,000 foot level. Thus, if a passenger can take up the oxygen provided, the airlines can maintain conditions which are not more severe than ground conditions.

However, if the air traveler requires oxygen in therapeutic doses or other special services, arrangements should be made with the air line before the flight, since such facilities are not routinely available. The physician should call the passenger agent to request these special services. If my experience, and that of my professional associates, constitutes a fair sample, the physician requesting special care will be gratified by the effective and wholehearted cooperation he will receive in insuring a safe and comfortable trip for his ambulatory patient.

W. R. Stovall, M.D.
Chief, Medical Division, Civil
Aeronautics Administration,
Washington, D. C.

Council on Medical Education and Hospitals

HOSPITAL FACILITIES FOR ALCOHOLIC PATIENTS

Report of Survey by Council on Medical Education and Hospitals

It has been estimated that 50,000,000 persons in the United States use alcoholic beverages and that of this number 6 per cent, or 3,000,000, become excessive drinkers; in the latter group nearly one fourth, or 750,000, have been said to be chronically alcoholic.[1] These estimates, it will be agreed, represent a major problem in relation to both social welfare and public health. It is recognized that the excessive drinker creates both a social and a legal problem; yet it is the growing view that the alcoholic person with his associated disorders should be regarded primarily as a sick person. While the medical approach emphasizes health needs, due consideration is also given to the educational, religious, social, economic, legal, psychologic and other factors involved in the problem of alcoholism.

With reference to the medical aspects of alcoholism, the following resolution was adopted at the Conference on Medical, Legal and Social Approaches to the Problem of Inebriety held in New York City, Jan. 8, 1947:

> *Be It Resolved Therefore* That the American Medical Association, the American College of Surgeons and other professional standardizing bodies be requested to review and/or establish minimum standards of hospitalization for alcoholic patients with the view toward: (1) establishing criteria for the effective care and treatment of alcoholic patients, and (2) encouraging hospitals to adopt a more favorable attitude towards the hospitalization of such patients; and that the resolution be transmitted to the officials concerned for their appropriate action.

This resolution sponsored jointly by the New York Academy of Medicine and the Research Council on Problems of Alcohol was given careful consideration by the Council on Medical Education and Hospitals at its meeting in Atlantic City June 1947, at which time the following action was reported to the Board of Trustees of the American Medical Association:

> The Council on Medical Education and Hospitals recognizes the importance of improving the standards and facilities for the hospitalization and care of alcoholic patients. As an initial step in the study of this problem, the Council in its next Annual Census of Hospitals, will obtain further information regarding the extent to which facilities for the treatment and care of alcoholic persons have been provided in general, psychiatric and other hospitals throughout the country. This information may then serve as a basis for further studies or action in cooperation with other agencies that are likewise concerned in the advancement of this program.

In conformity with this action the Council, at the end of 1947, requested the following information in the Annual Survey of Hospitals registered by the American Medical Association:

1. Do you admit patients for the treatment of acute alcoholism? for chronic alcoholism?
2. If so, how many beds are available for this purpose?
3. How many patients were admitted for the treatment of alcoholism last year?

Of a total of 6,276 hospitals included in this survey, 1,718 reported that alcoholic patients are accepted for treatment. These include 1,354 general hospitals, 291 nervous and mental institutions and 73 appearing under other classifications, as shown in table 1.

On the basis of control, 202 are listed as federal hospitals, 396 under state, city or county control, 787 as church or other nonprofit associations and 330 as proprietary hospitals. A further subdivision of the hospitals classified by control is shown in table 2.

With reference to the question "Do you admit patients for the treatment of acute alcoholism? For chronic alcoholism?" 783 hospitals reported the admission of acutely alcoholic persons only and 123 accept only chronically alcoholic persons, while 812 admit patients of both classifications. Combining these figures, one notes that acutely alcoholic persons are admitted in 1,595 hospitals and chronically alcoholic persons in 935.

Although 1,718 hospitals reported the acceptance of alcoholic patients, only 448 indicated the number of beds available for this purpose. The report of 4,026 beds, therefore, should not be interpreted as representing the total facilities currently available in the hospitals in this country. At least one or more beds would also be available in each of the 1,270 hospitals which, according to the report, admit alcoholic patients but did not specify the number of beds. It may be of interest to note that, of the beds specifically allotted for alcoholic patients, 1,537 are in general hospitals, 2,117 in nervous and mental institutions and 372 in other hospitals. In relation to ownership or control, it is found that the federal hospitals report 660 beds, those under state, city and county control 1,616, the church and other nonprofit associations 730 and the proprietary hospitals 1,020. Further information on the distribution of beds is contained in tables 1, 2 and 3.

Table 1.—*Hospitals Admitting Alcoholic Patients (Classified by Type of Service)*

Type of Service	Number of Hospitals	Beds for Alcoholic Patients	Alcoholic Patients Admitted
General	1,354	1,537	43,812
Nervous and mental	291	2,117	25,842
Tuberculosis	5	5	18
Industrial	3	...	21
Alcoholic	4	83	2,390
Convalescent and rest	3	20	489
Chronic	3	8	74
Drug	4	113	3,011
Cancer	1	1	3
Institutions	50	142	2,181
Totals	1,718	4,026	77,841

Table 2.—*Hospitals Admitting Alcoholic Patients (Classified by Control)*

Control	Number of Hospitals	Beds for Alcoholic Patients	Alcoholic Patients Admitted
U. S. Army	70	147	2,017
U. S. Navy	31	102	408
U. S. Public Health Service	26	56	1,363
Veterans Administration	53	282	6,412
Indian Affairs	21	4	90
Other federal	4	9	170
State	149	1,157	7,988
County	124	225	6,080
City	108	232	16,653
City-County	15	2	702
Nonprofit associations	426	442	10,571
Church	361	288	7,418
Individual	164	424	6,558
Partnership	56	139	2,337
Corporation	110	457	9,074
Totals	1,718	4,026	77,841

The report on the number of admissions was more complete, however, as 1,287 hospitals furnished information of this type. From this group came reports of 77,841 admissions for the treatment of acute and chronic alcoholism in the preceding year. These included 43,812 in general hospitals, 25,842 in nervous and mental institutions and 8,187 in other hospitals. The federal hospitals admitted 10,460, the state, city and county hospitals 31,423, the church and other nonprofit associations 17,989 and the proprietary group 17,969. Again reference should be made to tables 1, 2 and 3, which show a further distribution of admissions by states, type of hospital service and control.

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[1] The Scientific Approach to the Problem of Chronic Alcoholism, by the Research Council on Problems of Alcohol, New York City.

Lists of hospitals offering facilities for the treatment of alcoholism have been prepared showing the name of each hospital, location, type of service, control, the number of beds available for alcoholic patients, number of admissions and whether the hospital accepts acutely alcoholic persons, chronically alcoholic persons, or both. As indicated in the Council's report to the Board of Trustees, the present survey of hospital facilities should be regarded as an initial step in the study of the problem of alcoholism. This should be supplemented, however, by further studies and planning in accordance with the initial resolution, which aims at the establishment of specific criteria for the more effective care and treatment of alcoholic patients. To reach this purpose will require the combined efforts of all who are interested in seeking a reasonable solution of the problem of alcoholism.

Table 3.—*Hospitals Admitting Alcoholic Patients (Classified by States)*

State	No. of Hospitals	Admit Acutely Alcoholic Patients	Admit Chronically Alcoholic Patients	Beds for Alcoholic Patients	Alcoholic Patients Admitted
Alabama	34	33	15	25	1,453
Arizona	20	20	8	19	230
Arkansas	16	14	7	24	697
California	99	88	67	678	6,101
Colorado	29	23	19	37	1,200
Connecticut	22	20	17	159	1,013
Delaware	5	4	3	53	5
District of Columbia	6	6	5	58	1,922
Florida	39	37	23	112	2,154
Georgia	36	34	18	100	2,354
Idaho	17	17	5	3	160
Illinois	85	79	53	174	4,938
Indiana	29	25	14	43	411
Iowa	39	35	15	31	1,100
Kansas	43	38	25	50	542
Kentucky	22	22	9	100	1,021
Louisiana	16	16	8	21	624
Maine	12	10	9	56	172
Maryland	27	27	17	91	1,493
Massachusetts	37	33	24	141	2,766
Michigan	72	67	43	76	4,225
Minnesota	61	58	36	168	1,276
Mississippi	28	28	12	52	1,091
Missouri	39	39	19	103	1,955
Montana	29	27	15	23	508
Nebraska	34	31	17	126	698
Nevada	10	9	4	10	62
New Hampshire	10	10	3	..	114
New Jersey	36	33	19	63	2,758
New Mexico	21	21	11	9	248
New York	121	115	67	262	12,175
North Carolina	37	34	21	186	1,819
North Dakota	24	23	15	40	336
Ohio	52	49	28	153	1,929
Oklahoma	25	24	10	27	445
Oregon	22	20	12	25	1,515
Pennsylvania	77	64	43	93	3,658
Rhode Island	5	5	4	..	126
South Carolina	17	16	8	..	549
South Dakota	21	18	14	12	202
Tennessee	30	29	12	53	1,834
Texas	107	104	42	125	2,516
Utah	8	8	4	28	116
Vermont	14	13	6	9	211
Virginia	34	34	24	133	2,790
Washington	40	36	19	106	2,074
West Virginia	23	22	13	44	449
Wisconsin	73	65	42	74	1,979
Wyoming	15	14	9	42	427
Totals	1,718	1,595	935	4,026	77,841

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Written and Review of Case Histories. Part I.* Various Centers. Feb. 3. Final date for filing applications is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo

American Board of Proctology: *Examination in Anorectal Surgery.* Philadelphia, Nov. 12. Sec.-Gen., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas: * *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

Colorado: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Connecticut: * *Examination.* Hartford, Nov. 8-9. Secretary to the Board, Dr. Creighton Barker, 160 St. Ronan Street, New Haven. *Homeopathic.* Derby, Nov. 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

District of Columbia: * *Examination.* Washington, Nov 14-15 Sec., Mr. Paul C. Foley, Admin. Asst., 4130 E. Municipal Bldg., Washington.

Florida: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Hawaii: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maine: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Massachusetts: Boston, Nov. 15-18. Sec., Dr. George L. Schadt, 413 East State House, Boston.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: * *Endorsement.* Portland, Nov. 4. *Written.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Esther B. Starks, 1459 Ogden Street, Denver.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

New Mexico: *Examination.* Santa Fe, Nov. 6. Sec., Miss Marguerite Kilkenny, 110 W. Houghton St., Santa Fe.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr Clinton Gallaher, 813 Braniff Building, Oklahoma City

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South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Medical Motion Pictures

FILM REVIEW

The Circulation in the Fetus and in the Newborn. 16 mm., color, sound, 350 feet, showing time nine minutes. This is part of a series on Congenital Heart Disease prepared under the direction of George H. Humphreys II, M.D., Director of Surgical Service, Presbyterian Hospital, New York and Professor of Surgery, College of Physicians and Surgeons. Produced in 1949 by and procurable on rental or purchase from Sturgis-Grant Productions, Inc., 314 East Forty-Sixth Street, New York 17.

This is an animated film showing diagrammatically the differences in circulation during the fetal life as contrasted with life after birth. It shows the role of the placenta in the fetal circulation and the dependence of the fetus on the maternal body. The changes in the circulatory system at term, with the lungs of the baby starting to function, are graphically illustrated. The various degrees of oxygenation are shown throughout the film by differences in the red and blue color of the different vessels.

This film is recommended as a teaching film for general practitioners who may have forgotten some of the intricacies of the changes in circulation and in birth, for residents and for medical students during their course in obstetrics.

The animation and narration are well done.

Alcohol and the Human Body. 16 mm., black and white, sound, 480 feet (1 reel), showing time ten minutes. Prepared in collaboration with Anton J. Carlson, M.D., *Ph.D., Scientific Director,* The Research Council on Problems of Alcohol, Chicago. Produced in 1949 by and procurable on rental or purchase from Encyclopaedia Britannica Films, Inc., 1150 Wilmette Avenue, Wilmette, Ill.

This film undertakes to make clear, without resorting to abstruse terminology, the course that ethyl alcohol takes when it enters the human body in the form of beverages. The preparation of beer, wine and whiskey is described; their relative strengths are indicated, and their effects on behavior are suggested. Animated drawings show the absorption of the alcohol from the stomach and small intestine, the partial change to acetic acid in the liver, the circulation of the unchanged fraction in the blood and the gradual depression of successive parts of the brain. The nutritional consequences of chronic alcoholism are set forth simply and without exaggeration, and the proper hospital care of a patient in acute intoxication is illustrated.

This film is a cautious and objective introduction to a difficult subject. The narration appears to have been written with extraordinary care and every statement is undeniably unemotional.

This production will be found to be instructive by any group over the age of 12, but would probably be most useful at high school and young adult ages. The chemistry and physiology are elementary and could be understood by those without special training in these fields.

The photography, animation and narration are excellent.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Compensability of Death from Tularemia.—The petitioner filed a claim for a compensation award after the death of her husband. From the granting of an award by the commissioner, which was sustained in the trial court, the defendant appealed to the Supreme Court of Iowa.

The petitioner's husband was employed by the defendant to skin and stretch hides from fur-bearing animals. He worked with a slight cut or scratch on his finger. This cut developed into an "indolent ulcer," described by his physician as a manifestation of tularemia; all the other symptoms of tularemia developed, and he subsequently died of the disease. The trial court, in affirming an award for the petitioner, held that it was immaterial whether or not the cut on the deceased's finger had been received in the course of his employment and said ". . . the employment is shown without dispute to be one in which one might be exposed to tularemia. . . . It was the opinion of the doctors who testified that the deceased contracted the disease while engaged in the company's work."

The great majority of workmen's compensation acts, said the Supreme Court of Iowa, are limited to payment of compensation benefits for accidental injury. Our statute does not contain the "accidental" limitation. The benefits accrue from a personal injury arising out of and in the course of the workman's employment. The terms "injury" and "personal injury" are defined in the Iowa act as not to "include a disease unless it shall result from the injury." We have held, the court continued, that the injury may be a disease which is not occupational, that it may be an aggravation of injuries which in their origin were apart from the employment and that, in order to prove that the employee received a personal injury in his work, it is not necessary that there be proof of some special incident or unusual occurrence. Since it is not contended that the tularemia was an occupational disease, the only inquiry is whether the injury (in this case the disease of tularemia of which he died) arose out of and in the course of his employment. The doctors were emphatic in their opinions that the deceased contracted tularemia by the entry of the germ into the cut on his finger while he worked for the defendant, skinning animals which were infected with such disease. The medical testimony as to the probable origin of the disease was supplied with abundance. According to the doctors, the cut was the channel of entry of the tularemia germ. We are convinced, the Supreme Court concluded, that the record amply sustains the commissioner's finding that the disease arose out of and in the course of employment. Accordingly the commissioner's award in favor of the petitioner was affirmed.—*Ford et al. v. Goode et al., 38 N.W. (2d) 158 (Iowa, 1949).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for *permanent possession only from them.*

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

19:401-500 (May) 1949

Universal Serologic Reaction with Lipid Antigen: III. In Syphilis. R. L. Kahn and E. B. McDermott.—p. 401.
Id.: IV. In Lepromatous Leprosy. R. L. Kahn, B. J. Baribeau and F. T. Villalon.—p. 408.
Id.: V. In *Malaria.* R. L. Kahn.—p. 414.
Id.: VI. In Tuberculosis. R. L. Kahn.—p. 419.
Diagnostic Significance and Laboratory Methods in Determination of the 17-Ketosteroids. R. L. Landau.—p. 424.
Anti-Rh Agglutinins: Their Clinical Significance. A. W. Frisch and V. Jackets.—p. 435.
Mucopolysaccharide Content of Skin in Localized (Pretibial) Myxedema. II. E. M. Watson and R. H. Pearce.—p. 442.
Determination of Anti-Tryptic Activity in Human Plasma. B. B. Wells, H. N. Marvin and M. Waldvogel.—p. 448.

American Journal of Diseases of Children, Chicago

77:*561-702* (May) *1949*

Relation of Hemolytic Streptococcus to Rheumatic Fever: IV. Effect of Streptococcic Spreading Factor in Rheumatic Patients and Others. T. N. Harris and S. Friedman.—p. 561.
Vitamin A Absorption in the Newborn. A. E. Sobel, L. Besman and B. Kramer.—p. 576.
Irregularities of Breathing in the Newborn Period. P. J. Howard and A. R. Bauer.—p. 592.
Standard, Unipolar Limb and Precordial Leads in Children and Adolescents with Inactive Rheumatic Fever. M. F. Dunning and A. G. Kuttner.—p. 610.
Respiratory Air Flow Patterns in Children. R. Kaye, J. L. Whittenberger *and L. Silverman.—p. 625.*
Pediatric Report on Medical Conditions in the Virgin Islands. H. N. Sanford.—p. 662.
Pediatric Report on Medical Conditions in Puerto Rico. H. N. Sanford. —p. 665.

Archives of Internal Medicine, Chicago

83:477-592 (May) 1949

*Iron Overload (Hemosiderosis) Aggravated by Blood Transfusions. E. E. Muirhead, G. Crass, F. Jones and J. M. Hill.—p. 477.
Concurrent Herpes Zoster and Chickenpox: Report of Case. F. Fetter and T. G. Schnabel.—p. 502.
Disseminated Coccidioidomycosis and Lymphohematogenous Tuberculosis: Report of Case. B. Hyde and L. Hyde.—p. 505.
Present Status of Insulin Resistance: Report of Case with Autopsy. E. A. Haunz.—p. 515.
*Acute Renal Insufficiency: Comparison of Use of Artificial Kidney, Peritoneal Lavage and More Conservative Measures in Its Management. E. E. Muirhead, J. Vanatta and A. Grollman.—p. 528.
Colloid Osmotic Pressure in Chronic Hepatitis. M. Bjørneboe, C. Brun and F. Raaschou.—p. 539.
Activity of Carbon Anhydrase in Blood: Study of Patients with Dyspnea Consequent to Chronic Cardiac and Pulmonary Disease. M. D. Altschule and H. D. Lewis.—p. 547.
Gastroenterology: Review of Literature from July 1947 to July 1948. J. B. Kirsner, W. L. Palmer, W. E. Ricketts and others.—p. 552.

Iron Overload Aggravated by Blood Transfusions.—Muirhead and associates point out that, with the advent of blood banks and the greater confidence in blood transfusion therapy, larger volumes of blood are being administered. Under special conditions it is possible for prolonged transfusion therapy to be associated with a prominent iron overload of various tissues. In certain organs this metallic excess is associated with parenchymatous damage. The present discussion treats especially of the iron overload of anemic patients requiring transfusions over prolonged intervals. Five closely studied cases in which autopsies were subsequently performed are reported. The 5 cases represent three different kinds of severe anemia. There are 2 instances of acquired hemolytic anemia that failed to respond to splenectomy. In 2 cases the picture of "aplastic anemia" was present. The fifth case was one of classic pernicious anemia with repeated relapses due to failure of the patient to maintain liver therapy. In each of these 5 patients excessive iron deposits were evident throughout the body. It is apparent that blood transfusions by by-passing the mucosal absorption mechanism afford a rich source of excess iron (0.25 Gm. per 500 cc.). In cases *1, 2* and *5* the amount of infused iron seemed to account only for the liver iron content. The excessive iron deposited in other tissues requires an explanation. Since the patients received oral iron therapy during part of their illness and since the dietary intake throughout most of the illnesses was adequate, it appears that absorption of iron via the mucosa occurred despite an already existing excess of iron. The authors conclude that the outlook for patients that are sustained hematologically by prolonged blood transfusion therapy does not appear good. Two complications seem likely to develop: (*a*) frequent reactions to the infused blood, with a more rapid dissipation of the infused erythrocytes, and (*b*) iron overload of body tissue, mainly the liver.

Management of Acute Renal Insufficiency.—According to Muirhead and collaborators reports in the current scientific literature as well as in the lay press describing the use of the artificial kidney or peritoneal lavage in the treatment of acute oliguria or anuria give an erroneous impression of their wide field of usefulness as well as of the success of their application. The authors' investigations demonstrated many inherent dangers which previous investigators had failed to note. They do not aim to discredit the use of an artificial kidney, peritoneal lavage or other measures for removing waste products for certain patients. They wish to emphasize that the procedure, as at present available, has not been proved safe and that many patients so treated can be more effectively and more safely handled by simpler measures. They are at present engaged in attempting to perfect a safe artificial kidney. Until a given procedure has been proved capable of consistently prolonging the life of animals that have undergone nephrectomy, it is hazardous to apply it to a patient. It is preferable to rely on the normal course of events which results, in most cases, in spontaneous recovery of renal function, if the patients are not overloaded with salt and water in the vain attempt to stimulate urine production. The application of the artificial kidney of Kolff in dogs that have been subjected to nephrectomy failed to prolong life, despite an adequate removal of urea from the animals. Clinical data are presented which demonstrate that, contrary to current views, recovery may occur even after periods of anuria as long as eight days. A review of the literature indicates that patients surviving the application of the artificial kidney or peritoneal lavage would have probably survived without their application. The use of safer procedures for the treatment of acute renal failure is advocated.

Archives of Pathology, Chicago

47:411-516 (May) 1949

Effects of Various Degrees of Protein Depletion on Histologic and Clinical Structure of Rat Liver. E. R. Jaffé, Eleanor M. Humphreys, E. P. Benditt and R. W. Wissler.—p. 411.
Proliferation of Epithelium of Intrahepatic Bile Ducts in Parabiotic Rats Following Obstruction of Bile Ducts. I. T. Zeckwer.—p. 424.
Right Aortic Arch with Vascular Ring Constricting Esophagus and Trachea: Report of 2 Cases. B. Halpert, W. T. Snoddy, K. E. Bohan and C. L. Freede.—p. 429.
Acute Lesions in Weaning Rats Fed 4-Aminopteroylglutamic Acid. H. B. Ritter and J. J. Oleson.—p. 435.
Effects of Administration of Vitamin E Concentrate and Cholesterol and Bile Salt on Aorta of Rat. W. Marx, Love Marx, Emily R. Meserve and others.—p. 440.
Thrombotic Thrombopenic Purpura Caused *by Iodine: Report of* Case. W. E. Ehrich and J. Seifter.—p. 446.
Relations Between Volumes of Closed Hypothermal Cerebral Lesions and Symptoms in Rabbits. C. B. Taylor, G. M. Hass and J. E. Maloney. —p. 450.
Effect of Heat on Nutritive Value of Lactalbumin: Chemical and Morphologic Changes. P. Rizzo, Ruth M. Davis and A. H. Smith. —p. 464.
Cardiac Hypertrophy: Immediate Response to Starling's Law of Increased Energy Output of Heart. Cecil A. Krakower and Helen E. Heino. —p. 475.
Cartilage in Kidney. J. A. Bigler and W. P. Killingsworth.—p. 487.
Late Effects of Radium and Plutonium on Bone. Margaret A. Bloom and W. Bloom.—p. 494.

Oregon: * *Endorsement.* Portland, Nov. 4. *Written.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

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MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Compensability of Death from Tularemia.—The petitioner filed a claim for a compensation award after the death of her husband. From the granting of an award by the commissioner, which was sustained in the trial court, the defendant appealed to the Supreme Court of Iowa.

The petitioner's husband was employed by the defendant to skin and stretch hides from fur-bearing animals. He worked with a slight cut or scratch on his finger. This cut developed into an "indolent ulcer," described by his physician as a manifestation of tularemia; all the other symptoms of tularemia developed, and he subsequently died of the disease. The trial court, in affirming an award for the petitioner, held that it was immaterial whether or not the cut on the deceased's finger had been received in the course of his employment and said ". . . the employment is shown without dispute to be one in which one might be exposed to tularemia. . . . It was the opinion of the doctors who testified that the deceased contracted the disease while engaged in the company's work."

The great majority of workmen's compensation acts, said the Supreme Court of Iowa, are limited to payment of compensation benefits for accidental injury. Our statute does not contain the "accidental" limitation. The benefits accrue from a personal injury arising out of and in the course of the workman's employment. The terms "injury" and "personal injury" are defined in the Iowa act as not to "include a disease unless it shall result from the injury." We have held, the court continued, that the injury may be a disease which is not occupational, that it may be an aggravation of injuries which in their origin were apart from the employment and that, in order to prove that the employee received a personal injury in his work, it is not necessary that there be proof of some special incident or unusual occurrence. Since it is not contended that the tularemia was an occupational disease, the only inquiry is whether the injury (in this case the disease of tularemia of which he died) arose out of and in the course of his employment. The doctors were emphatic in their opinions that the deceased contracted tularemia by the entry of the germ into the cut on his finger while he worked for the defendant, skinning animals which were infected with such disease. The medical testimony as to the probable origin of the disease was supplied with abundance. According to the doctors, the cut was the channel of entry of the tularemia germ. We are convinced, the Supreme Court concluded, that the record amply sustains the commissioner's finding that the disease arose out of and in the course of employment. Accordingly the commissioner's award in favor of the petitioner was affirmed.—*Ford et al. v. Goode et al., 38 N.W. (2d) 158 (Iowa, 1949).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

19:401-500 (May) 1949

Universal Serologic Reaction with Lipid Antigen: III. In Syphilis. R. L. Kahn and E. B. McDermott.—p. 401.

Id.: IV. In Lepromatous Leprosy. R. L. Kahn, B. J. Baribeau and F. T. Villalon.—p. 408.

Id.: V. In Malaria. R. L. Kahn.—p. 414.

Id.: VI. In Tuberculosis. R. L. Kahn.—p. 419.

Diagnostic Significance and Laboratory Methods in Determination of the 17-Ketosteroids. R. L. Landau.—p. 424.

Anti-Rh Agglutinins: Their Clinical Significance. A. W. Frisch and V. Jackets.—p. 435.

Mucopolysaccharide Content of Skin in Localized (Pretibial) Myxedema. II. E. M. Watson and R. H. Pearce.—p. 442.

Determination of Anti-Tryptic Activity in Human Plasma. B. B. Wells, H. N. Marvin and M. Waldvogel.—p. 448.

American Journal of Diseases of Children, Chicago

77:561-702 (May) 1949

Relation of Hemolytic Streptococcus to Rheumatic Fever: IV. Effect of Streptococcic Spreading Factor in Rheumatic Patients and Others. T. N. Harris and S. Friedman.—p. 561.

Vitamin A Absorption in the Newborn. A. E. Sobel, L. Besman and B. Kramer.—p. 576.

Irregularities of Breathing in the Newborn Period. P. J. Howard and A. R. Bauer.—p. 592.

Standard, Unipolar Limb and Precordial Leads in Children and Adolescents with Inactive Rheumatic Fever. M. F. Dunning and A. G. Kuttner.—p. 610.

Respiratory Air Flow Patterns in Children. R. Kaye, J. L. Whittenberger and L. Silverman.—p. 625.

Pediatric Report on Medical Conditions in the Virgin Islands. H. N. Sanford.—p. 662.

Pediatric Report on Medical Conditions in Puerto Rico. H. N. Sanford.—p. 665.

Archives of Internal Medicine, Chicago

83:477-592 (May) 1949

*Iron Overload (Hemosiderosis) Aggravated by Blood Transfusions. E. E. Muirhead, G. Crass, F. Jones and J. M. Hill.—p. 477.

Concurrent Herpes Zoster and Chickenpox: Report of Case. F. Fetter and T. G. Schnabel.—p. 502.

Disseminated Coccidioidomycosis and Lymphohematogenous Tuberculosis: Report of Case. B. Hyde and L. Hyde.—p. 505.

Present Status of Insulin Resistance: Report of Case with Autopsy. E. A. Haunz.—p. 515.

*Acute Renal Insufficiency: Comparison of Use of Artificial Kidney, Peritoneal Lavage and More Conservative Measures in Its Management. E. E. Muirhead, J. Vanatta and A. Grollman.—p. 528.

Colloid Osmotic Pressure in Chronic Hepatitis. M. Bjørneboe, C. Brun and F. Raaschou.—p. 539.

Activity of Carbon Anhydrase in Blood: Study of Patients with Dyspnea Consequent to Chronic Cardiac and Pulmonary Disease. M. D. Altschule and H. D. Lewis.—p. 547.

Gastroenterology: Review of Literature from July 1947 to July 1948. J. B. Kirsner, W. L. Palmer, W. E. Ricketts and others.—p. 552.

Iron Overload Aggravated by Blood Transfusions.—Muirhead and associates point out that, with the advent of blood banks and the greater confidence in blood transfusion therapy, larger volumes of blood are being administered. Under special conditions it is possible for prolonged transfusion therapy to be associated with a prominent iron overload of various tissues. In certain organs this metallic excess is associated with parenchymatous damage. The present discussion treats especially of the iron overload of anemic patients requiring transfusions over prolonged intervals. Five closely studied cases in which autopsies were subsequently performed are reported. The 5 cases represent three different kinds of severe anemia. There are 2 instances of acquired hemolytic anemia that failed to respond to splenectomy. In 2 cases the picture of "aplastic anemia" was present. The fifth case was one of classic pernicious anemia with repeated relapses due to failure of the patient to maintain liver therapy. In each of these 5 patients excessive iron deposits were evident throughout the body. It is apparent that blood transfusions by by-passing the mucosal absorption mechanism afford a rich source of excess iron (0.25 Gm. per 500 cc.). In cases 1, 2 and 5 the amount of infused iron seemed to account only for the liver iron content. The excessive iron deposited in other tissues requires an explanation. Since the patients received oral iron therapy during part of their illness and since the dietary intake throughout most of the illnesses was adequate, it appears that absorption of iron via the mucosa occurred despite an already existing excess of iron. The authors conclude that the outlook for patients that are sustained hematologically by prolonged blood transfusion therapy does not appear good. Two complications seem likely to develop: (*a*) frequent reactions to the infused blood, with a more rapid dissipation of the infused erythrocytes, and (*b*) iron overload of body tissue, mainly the liver.

Management of Acute Renal Insufficiency.—According to Muirhead and collaborators reports in the current scientific literature as well as in the lay press describing the use of the artificial kidney or peritoneal lavage in the treatment of acute oliguria or anuria give an erroneous impression of their wide field of usefulness as well as of the success of their application. The authors' investigations demonstrated many inherent dangers which previous investigators had failed to note. They do not aim to discredit the use of an artificial kidney, peritoneal lavage or other measures for removing waste products for certain patients. They wish to emphasize that the procedure, as at present available, has not been proved safe and that many patients so treated can be more effectively and more safely handled by simpler measures. They are at present engaged in attempting to perfect a safe artificial kidney. Until a given procedure has been proved capable of consistently prolonging the life of animals that have undergone nephrectomy, it is hazardous to apply it to a patient. It is preferable to rely on the normal course of events which results, in most cases, in spontaneous recovery of renal function, if the patients are not overloaded with salt and water in the vain attempt to stimulate urine production. The application of the artificial kidney of Kolff in dogs that have been subjected to nephrectomy failed to prolong life, despite an adequate removal of urea from the animals. Clinical data are presented which demonstrate that, contrary to current views, recovery may occur even after periods of anuria as long as eight days. A review of the literature indicates that patients surviving the application of the artificial kidney or peritoneal lavage would have probably survived without their application. The use of safer procedures for the treatment of acute renal failure is advocated.

Archives of Pathology, Chicago

47:411-516 (May) 1949

Effects of Various Degrees of Protein Depletion on Histologic and Clinical Structure of Rat Liver. E. R. Jaffé, Eleanor M. Humphreys, E. P. Benditt and R. W. Wissler.—p. 411.

Proliferation of Epithelium of Intrahepatic Bile Ducts in Parabiotic Rats Following Obstruction of Bile Ducts. I. T. Zeckwer.—p. 424.

Right Aortic Arch with Vascular Ring Constricting Esophagus and Trachea: Report of 2 Cases. B. Halpert, W. T. Snoddy, K. E. Bohan and C. L. Freede.—p. 429.

Acute Lesions in Weaning Rats Fed 4-Aminopteroylglutamic Acid. H. B. Ritter and J. J. Oleson.—p. 435.

Effects of Administration of Vitamin E Concentrate and Cholesterol and Bile Salt on Aorta of Rat. W. Marx, Love Marx, Emily R. Meserve and others.—p. 440.

Thrombotic Thrombopenic Purpura Caused by Iodine: Report of Case. W. E. Ehrich and J. Seifter.—p. 446.

Relations Between Volumes of Closed Hypothermal Cerebral Lesions and Symptoms in Rabbits. C. B. Taylor, G. M. Hass and J. E. Maloney. —p. 450.

Effect of Heat on Nutritive Value of Lactalbumin: Chemical and Morphologic Changes. P. Rizzo, Ruth M. Davis and A. H. Smith. —p. 464.

Cardiac Hypertrophy: Immediate Response to Starling's Law of Increased Energy Output of Heart. Cecil A. Krakower and Helen E. Heino. —p. 475.

Cartilage in Kidney. J. A. Bigler and W. P. Killingsworth.—p. 487.

Late Effects of Radium and Plutonium on Bone. Margaret A. Bloom and W. Bloom.—p. 494.

Delaware State Medical Journal, Wilmington

21:67-86 (May) 1949

Diabetes Mellitus and Arteriosclerosis. E. M. Bohan.—p. 67.

Gastrojejunocolic Fistula: Case Report. P. Mava and W. W. Lattomus.—p. 70.

Radical Surgery for Advanced Cancer. G. S. Serino.—p. 74.

Local Health Boards in Delaware. G. J. Boines.—p. 78.

Time to Stand Up and Be Counted. G. F. Lull.—p. 82.

Florida Medical Association Journal, Jacksonville

35:673-740 (May) 1949

Nasal Sinusitis: Clarification of Certain Problems of General Interest. A. R. Hollender.—p. 691.

Ureteral Calculi in Children. A. J. Butt.—p. 696.

Venereal Diseases: Diagnosis and Treatment. R. F. Sondag.—p. 699.

Role of Quinine and Urea Hydrochloride in Proctology. R. V. Terrell and C. C. Chewning Jr.—p. 704.

Iowa State Medical Society Journal, Des Moines

39:187-230 (May) 1949

Diagnosis and Surgical Treatment of Pulmonary Stenosis. W. J. Potts.—p. 187.

Ritter's Disease. J. N. Lande.—p. 189.

Pulsion Diverticulum of Esophagus. L. T. Palumvo.—p. 191.

Accessory Scrotum, Posteriorly Located: Review of Literature and Report of Case. W. W. Daut and R. V. Daut.—p. 194.

Veterans Administration Problem: Survey of 200 Consecutive Cases. T. B. Throckmorton.—p. 196.

39:231-278 (June) 1949

President's Address. J. E. Reeder.—p. 231.

President-Elect's Address. N. G. Alcock.—p. 231.

Saddle Block Anesthesia in Pelvic Deliveries: Report of 150 Cases. W. A. Boice and W. H. Stenstrom.—p. 234.

*Saddle Block Anesthesia in Obstetrics: Report of 500 Cases. L. R. Pearlman.—p. 242.

Carcinoma of Prostate with Posterior Extension into the Rectum: Report of 3 Cases. J. L. Montgomery.—p. 245.

Ligation of the Common Iliac Vein for Repeated Pulmonary Embolism: Case Report. J. M. Bruner.—p. 248.

Unusual Case of Nontropical Sprue Which Responded to Folic Acid. P. W. Montgomery and W. M. Fowler.—p. 250.

Saddle Block Anesthesia in Obstetrics.—Pearlman says that since Parmley and Adriani in 1946 reported observations on 100 obstetric patients in whom they employed saddle block anesthesia with dibucaine (nupercaine®), he had used this method in 500 cases, using essentially the same technic. In this series there were 196 primigravidas and 304 multigravidas. Four hundred and sixty-two had operative deliveries, and 38 had spontaneous deliveries. The obstetricians conducting this series with the author usually advocated routine outlet forceps; hence the low incidence of spontaneous deliveries. Saddle block anesthesia increases the incidence of operative vaginal deliveries, but this is not considered a contraindication to its use in competent hands. The procedure has an advantage over inhalation anesthesia in patients with cardiac disorders, toxemias and disease of the upper part of the respiratory tract. The primary disadvantage was the occurrence of postspinal headache. The method proved advantageous to the patient, the infant, the delivery room personnel and the obstetrician. It is a safe and simple procedure with minimal complications in the hands of competent anesthesiologists.

Journal of Allergy, St. Louis

20:159-228 (May) 1949

Experimental Sensitization with Food Dyes and Cross-Sensitization to Paraphenylenediamine. R. L. Mayer.—p. 159.

Fixed Anaphylactic Sensitization: Bromsulphalein Studies. J. J Sievers, G. R. Morey and M. Samter.—p. 167.

Chemical Isolation and Biologic Assay of Extracellular Antigenic Fractions from Pathogenic Fungi. E. L. Keeney and N. Eriksen.—p. 172.

Studies of Capillary Permeability in Allergy with Dermofluorometer. L. H. Criep and M. I. Levine.—p. 185.

Sensitivity to Edible Vegetable Oils. K. D. Figley.—p. 198.

Statistical Study of Emotional Component in Allergy: Its Relationship to Age and Sex Distribution of 5,583 Patients. M. B. Cohen and L. E. Abram.—p. 207.

Transitory Pulmonary Infiltrations (Loeffler's Syndrome) with Case Report. A. M. Tocker.—p. 211.

Vaccinial Infection in Children with Atopic Dermatitis. J. H. Fries and S. Borne.—p. 222.

Journal of Gerontology, Springfield, Ill.

4:90-183 (April) 1949. Partial Index

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Direct Effect of Steroids on Senile Human Skin: Preliminary Report. J. W. Goldzieher.—p. 104.

Correlation Between Clinical Appearance of Skin and Skin Lipid Secretion in Middle-Age and Old Individuals. S. A. Kvorning and E. Kirk.—p. 113.

Constipation in the Aged, Attempts at Therapy. H. Sorter, M. Berg and H. Necheles.—p. 121.

Serum Protein-Bound Iodine and Age. W. B. Kountz, M. Chieffi and E. Kirk.—p. 132.

Distinctive Features of Coronary Disease in the Aged. E. P. Boas.—p. 136.

Journal of International College of Surgeons, Chicago

12:207-400 (May-June) 1949. Partial Index

Thyroiditis: Diagnosis and Treatment. J. Hertz.—p. 211.

*Evaluation of Present Treatment of Hyperthyroidism. J. deJ. Pemberton, S. F. Haines and F. R. Keating Jr.—p. 223.

Present Status of Treatment of Hyperthyroidism. G. Crile Jr.—p. 229.

Malignancy of Thyroid Gland. A. S. Jackson.—p. 234.

Thyrotoxicosis Without Elevated Basal Metabolism. V. E. Chesky and C. R. Schmidt.—p. 238.

Relation of Metabolism to Thyroid Surgery. M. N. Foote.—p. 245.

Radioiodine in Thyroid Disease. G. M. Curtis and M. B. Fertman.—p. 254.

Thyroidectomy—Prevention and Treatment of Complications. D. C. McGregor.—p. 261.

Important Anatomical Structures in Thyroidectomy. M. Nordland.—p. 271.

Thyroid Anesthesia. T. C. Davison and A. H. Letton.—p. 281.

Progress in Dealing with Vocal Cord Paralyses. B. T. King.—p. 288.

Treatment of Hyperthyroidism, Especially with Radioactive Iodine. E. M. Chapman.—p. 301.

Pre- and Postoperative Care of Patient with Hyperthyroidism. W. R. Lovelace.—p. 305.

Preoperative and Postoperative Treatment in Hyperthyroidism. L. Seed.—p. 310.

*Surgical Management of Chronic Ulcerative Colitis. H. E. Bacon and G. D. Vaughan.—p. 320.

Radical Amputation for Cancer of Breast With and Without Irradiation: Statistical Study. C. C. Kennedy.—p. 324.

Present Treatment of Hyperthyroidism.—Pemberton and co-workers report 789 consecutive cases of hyperthyroidism in which thyroidectomy was performed at the Mayo Clinic up to Jan. 1, 1948. Four hundred and fifty-five patients had toxic diffuse goiter. There were no deaths in this group. Of 334 patients who had adenomatous goiter associated with hyperthyroidism, 2 died. The mortality rate for both groups, comprising all the cases of hyperthyroidism, was only 0.25 per cent. Subtotal thyroidectomy was performed as a single stage procedure in all the cases of toxic diffuse goiter and in all but 3 of the cases of adenomatous goiter. The authors feel that thyroidectomy after administration of either strong iodine (Lugol's) solution alone or strong iodine solution and propylthiouracil preparation is the most conservative method of treatment for the majority of patients with toxic diffuse goiter. The short time needed for this method of treatment, the speed of control of hyperthyroidism, the high incidence of permanence of control and the low incidence of morbidity and death make surgical treatment a method which must still be considered in most cases of hyperthyroidism and which will be the treatment of choice in many instances. Propylthiouracil is a valuable drug for the control of hyperthyroidism, but, because of its potential toxic side effects and because of the high incidence of relapses after its withdrawal, employment of this agent as the method of choice in the total treatment of toxic diffuse goiter has not been established. As a means of preparing the patient for operation, medication with iodine has proved adequate except for a small group of patients whose operative risk is high because of severity of hyperthyroidism or because of complications. For this group, treatment with propylthiouracil has been found to be valuable as an additional measure of preparation. The low surgical mortality rate reported herein may be ascribed to these methods of preoperative treatment. Treatment with radioiodine proved to be an effective means of control in many cases of hyperthyroidism. Until greater accuracy in gaging the dose is established and until the potential radiation hazard in the treatment of hyperthyroidism with radioiodine is known, the employment of this drug should be limited to patients for whom thyroidectomy is regarded as unduly hazardous.

Surgical Management of Chronic Ulcerative Colitis.—Bacon and Vaughan customarily prescribe a rigid medical regimen for their patients with chronic ulcerative colitis, which includes individualized diet, adequate vitamins, transfusions of blood and plasma with regular frequency and in small amounts, parenteral administration of protein derivatives and sulfathalidine® alternating with neoprontosil.® Amebicides, such as emetine hydrochloride, may be employed even though repeated mucosal scrapings and stool specimens do not show the parasite. Where severe exacerbations and remissions of the disease have occurred on two or three occasions, surgical intervention is indicated. Ordinarily a preliminary ileostomy is established and subsequent colectomy performed, provided the case conforms to its indications, the patient presenting signs and symptoms of persistent sepsis, extensive scarring of the bowel, fibrous stricture, pseudopolypoid and malignant degeneration and arthritic change. In the authors' experience with 19 ileostomies, performed either as an emergency or elective procedure, the mortality rate was 21 per cent. There were twelve colectomies, either total or partial, without death; with the exception of 1 case, removal of the rectum has been required as the final step.

Journal of Investigative Dermatology, Baltimore

12:255-316 (May) 1949

Tickbite Granuloma. N. Tobias.—p. 255.
Reaction of Psoriasis Following Use of Gamma Globulin G. H Klinck Jr.—p. 261.
*Effect of Certain Hyperkinemics on Blood Flow Through Skin. K. Lange and D. Weiner.—p. 263.
Cutaneous Cryptococcosis: Survey of Cryptococcus on Normal and Pathologic Skin. H. G. Ravits.—p. 271.
Additional Studies on Psoriasis in Tropics and in Starvation Camps R. D. G. Ph. Simons.—p. 285.
Species of Aloe (Other Than Aloe Vera) in Treatment of Roentgen Dermatitis. L. J. A. Loewenthal.—p. 295
Contact Dermatitis Due to Procaine: Common Occupational Disease of Dentists. E. L. Laden and D. A. Wallace.—p. 299.
Measurement of Pain Threshold and Superficial Hyperalgesia in Diseases of Skin. C. B. Potelunas, M. D. Meixner and J. D. Hardy —p. 307.

Effect of Hyperkinemic Agents on Blood Flow Through Skin.—Lange and Weiner say that although the public is making wide use of skin-irritating ointments and liniments because of their rubefacient qualities, the members of the medical profession have largely disregarded these agents because of the absence of concrete evidence of therapeutic value. The authors developed a method for the evaluation of the effectiveness of different preparations by estimating the increase in blood flow. Other investigators had demonstrated that some rubefacients, as mustard and turpentine, do not produce an increase in skin temperature in spite of the production of intense redness of the skin. The vasodilation in these cases seems to be mainly venous in character, thus not producing an increase in blood flow through the area. The term rubefacients is therefore ambiguous Passive and active hyperemia are both included in it, although physiologically and therapeutically there is a great difference between the two. The authors suggest the use of the term hyperkinemics for preparations which increase the blood flow through an area. They list the composition of six counterirritants which they tested on the arms of 35 volunteers to determine the ability of the agents to produce an increase in skin temperature as measured by thermocouples. The products vary in ability to increase blood flow. Three preparations failed almost completely to increase the skin temperature; one even reduced the skin temperature slightly. One was only slightly effective. The other three preparations produced an increase in temperature but in different degrees. One preparation was highly effective but decreased in effectiveness toward the end of the test period of four and one-half hours. Another preparation was exceedingly effective as well as long lasting. The sensitivity to hyperkinemic agents varies greatly in different persons, but the general pattern of reaction to the individual preparations is rather constant in different persons. The effect of a superficially applied hyperkinemic agent can extend to the depth of 2.5 cm. below the surface of the skin as measured by thermoneedles. The authors believe that hyperkinemic agents can be of real therapeutic value by producing a considerable increase in skin temperature and capillary permeability, leading to a better supply of blood for an area and to the faster removal of metabolites and toxins.

New England Journal of Medicine, Boston

240:747-786 (May 12) 1949

Variant of Hofstätter-Cullen Sign in Intra-Abdominal Hemorrhage from Ectopic Pregnancy with Note on Mechanism of Its Production. J. Fallon and J. J. Manning.—p. 747.
Effect of Oral Therapy with Cobaltous Chloride on Blood of Patients Suffering with Chronic Suppurative Infection. J. C. Robinson, G. W. James III and R. M. Kark.—p. 749.
Erythropoietic Effect of Cobalt in Patients With or Without Anemia. L. Berk, J. H. Burchenal and W. B. Castle.—p. 754.
Methods of Induction in Pediatric Anesthesia. R. M. Smith.—p. 761.
Oral Surgery (Concluded). K. H. Thoma.—p. 765.
Adenocarcinoma (Low Grade) of Ampulla of. Vater.—p. 773.
Carcinoma of Ascending Colon, with Metastases to Liver, Regional Lymph Nodes, Lungs and Kidney. Arteriosclerotic Aneurysm of Abdominal Aorta, Wired.—p. 776.

Ohio State Medical Journal, Columbus

45:429-536 (May) 1949

Pyarthrosis in Infancy—Report of Case with Review of Literature. J. V. Greenebaum, J. A. Freiberg and E. L. Saenger.—p. 453.
Myotonia Congenita (Thomsen's Disease): Report of Case. C. R Freeble Jr. and J. M. Rini.—p. 459.
Aureomycin in Infections of Urinary Tract. R. F. Jukes.—p. 460.
Some Fundamentals in Water and Electrolyte Balance. W. G. Maddock. —p. 462.
Rupture of Appendiceal Stump Three Months After Uneventful Appendectomy with Repair and Recovery. L. O. Baumgardner.—p. 467.

Philippine Medical Association Journal, Manila

25:159-210 (April) 1949

Surgical Problems in Urinary Lithiasis. L. F. Torres Jr.—p. 159.
Public Health Approach to Our Nutrition Problems. J. Salcedo Jr. —p. 165.
Glaucoma Problem in Philippines. G. de Ocampo.—p. 173.
Present Concepts, Practices, and Trends in Public Health Administration in the United States. C. R. Pascual.—p. 181.
Observations on Hookworm Anemia in the North General Hospital. J. R. Cruz, A. Guytingco and W. R. Kasilag.—p. 191.
Dermoid Cyst of Urinary Bladder with Calculus: Case Report. A. A. Galvez.—p. 195.
Management of Sterility in Bontoc Hospital. F. V. D'Bayan.—p. 197.

Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

24:277-308 (May 25) 1949

*Effects of Adrenal Cortical Hormone 17-Hydroxy-11-Dehydrocorticosterone (Compound E) on Acute Phase of Rheumatic Fever: Preliminary Report. P. S. Hench, C. H. Slocumb, A. R. Barnes and others.—p. 277.
Observations on Hormone of Adrenal Cortex Designated Compound E. E. C. Kendall.—p. 298.
Oral Use of Aureomycin in Treatment of Late Cutaneous Syphilis. P. A. O'Leary, R. R. Kierland and W. E. Herrell.—p. 302.
Tuberculous Anal Fistula with Subsequent Development of Pulmonary Tuberculosis: Report of Case. R. J. Jackman and N. D. Smith. —p. 307.

Effects of the Adrenal Cortical Hormone (Compound E) on Acute Rheumatic Fever.—Hench and associates administered the adrenal cortical hormone, 17-hydroxy-11-dehydrocorticosterone (compound E, Kendall) to 3 adolescent patients with acute rheumatic fever. Two of the patients were in the first attack of acute rheumatic fever; the third probably was in a recurrent attack. Compound E acetate was administered intragluteally as a suspension in a sodium chloride solution of finely ground crystals in a concentration of 25 mg. per cubic centimeter. The total daily doses generally were 200 mg. (100 mg. given twice a day) for the first several days, and thereafter 100 mg. (50 mg. given twice a day) for a few days more. Prior to admission to the hospital the patients had received for a few days sulfonamide compounds, penicillin or salicylates, or a combination of these, generally without significant effect. During the few days prior to the administration of the compound, while preliminary clinical, biochemical and electrocardiographic studies were being made, the patients received either no medicament or a few small doses of codeine, which likewise was discontinued before use of the compound was begun. In each of the 3 patients treatment with the agent was followed by the rapid disappearance not only of the fever, tachycardia and polyarthritis but also of the elevated sedimentation rates and abnormal electrocardiographic changes. In view of the beneficial effect of the endocrine substance on the skeletal muscles and fibrous tissues of patients with rheumatoid arthritis, it may be hoped that the compound will exert a similar effect on the cardiac muscles and fibrous valves in rheumatic fever, an effect which salicylates cannot produce. Even though the effects observed in this study are encouraging, it must be emphasized that these patients will have to be observed for many months before it can be determined whether or not treatment with the compound has prevented or lessened the chronic organic injury to the heart valves or myocardium. No supplies of compound E are expected for treatment or additional research until sometime in 1950 at the earliest, when supplies still will be exceedingly small.

Public Health Reports, Washington, D. C.

64:657-684 (May 27) 1949

Birth of Community Mental Health Clinic. E. Davens and P. Lemkau. —p. 657.
Effects of DDT Dusting on Domestic Rats Under Colony and Field Conditions. J. E. Dent, H. B. Morlan and E. L. Hill.—p. 666.
Avirulent Isolate of Salmonella Typhosa 58 (Panama Carrier). H. C. Batson, M. Landy and A. Abrams.—p. 671.

64:685-716 (June 3) 1949

Studies of Patients Discharged from Tuberculosis Sanatoria: II. Mortality Rates Associated with Selected Characteristics of the Patient Population. *Agnes W. Brewster and R. C. Fletcher.*—p. 687.
Characteristics of Commercial X-Ray Screens and Films.—VI. W. W. Van Allen.—p. 706.

64:717-748 (June 10) 1949

Summary of Antimalarial Drugs. W. C. Cooper.—p. 717.
Prevalence of Poliomyelitis in 1948. C. C. Dauer.—p. 733.

Radiology, Syracuse, N. Y.

52:777-932 (June) 1949

Peptic Ulcer: Importance of Films in Diagnosis. F. E. Templeton. —p. 777.
Place of Fluoroscopy in Diagnosis of Peptic Ulcer. M. Harris.—p. 781.
Physical Problems of Fluoroscopy and Spot-Film Radiography. R. H. Morgan.—p. 786.
Gastroscopy in Evaluation of Patients with Peptic Ulcer. M. E. Dailey. —p. 796.
Peptic Ulcer: Modern Criteria for Diagnosis and Attempted Diagnosis of Healing. D. L. Wilbur and M. S. M. Watts.—p. 800.
Evaluation of Effects of Radiation on Non-Malignant Lesions of Nasopharynx. M. H. Cutler, R. E. Marcus and F. L. Lederer.—p. 816.
*Endocrine Factors in Hypertension; Treatment by Roentgen Irradiation of Pituitary and Adrenal Regions. J. H. Hutton, J. T. Case, E. C. Olson, W. W. Furey, S. Fahlstrom, W. L. Culpepper and E. E. Madden.—p. 819.
Rapid Quantitative Scale Method for Estimating the Percentage Concentration of Priodax in Gallbladder. M. H. Poppel and Celia Bercow. —p. 829.
Sensitometry of Roentgenographic Films and Screens. R. H. Morgan and W. W. Van Allen.—p. 832.
Relationships Between Chemical and Biologic Effects of Ionizing Radiations. R. E. Zirkle.—p. 846.
Structural Differences in Bone Matrix Associated with Metabolized Radium. F. E. Hoecker and P. G. Roofe.—p. 856.
Individualizing Tumor Dose in Carcinoma of Uterine Cervix by Means of Simple Caliper. J. B. Jarvis.—p. 866.
Effects of Continuous Radiation on Chick Embryos and Developing Chicks: II. Bone Marrow, Lymphoid Tissue, and Peripheral Blood. S. Warren and F. J. Dixon.—p. 869.

Endocrine Factors in Hypertension.—Hutton and associates report 795 patients with hypertension; 486 of these were seen by one or more of the group of the authors, and 309 were reported to them by other workers. They had also seen 42 patients with both hypertension and diabetes, but these are not included in this report. They arrive at the conclusion that at least a small proportion of cases of hypertension have an endocrine background and that every patient who has this disorder should have an endocrine study. The pituitary and adrenals seem to be most often involved. Roentgen irradiation was directed to these regions in an attempt to control symptoms and lower the blood pressure. The authors have themselves treated 413 patients with improvement (a lowering of blood pressure of at least 30 mm. systolic and 10 mm. diastolic, with symptomatic relief) in 70 per cent of those receiving adequate treatment. Factors which have been found most satisfactory were 120 kilovolts, 3 to 5 milliamperes, 3.0 mm. of aluminum and 50 cm. target skin distance. Roentgen rays were directed to three areas at each sitting—two pituitary portals, each 10 by 10 cm., and a 15 by 15 cm. portal over the adrenals —about 50 r, measured in air, being given to each portal. The blood pressure was checked repeatedly after treatment, and roentgen therapy was repeated only when there was no favorable response to the first treatment or there was a recurrence of symptoms or a rise in pressure. As many as six treatments may be given in a series at weekly intervals, and the series may be repeated as needed. Eventually, the treatment ceases to be effective (after six to eight years in the authors' experience). No evidence of roentgen damage has been observed following this treatment. In 2 cases autopsy revealed no injury to the pituitary, adrenals or other tissues or organs.

Review of Gastroenterology, New York

16:369-450 (May) 1949

Diabetes Mellitus and Gastrointestinal Disease. H. O. Mosenthal. —p. 381.
Tuberculosis in Gastrointestinal Cases. C. Muschenheim.—p. 384.
Psychosomatic Involvements in Gastrointestinal Cases. R. A. Gerber. —p. 387.
Cardiac Manifestations of Gastrointestinal Disease. H. E. B. Pardee. —p. 395.
*Modus Operandi of Carminatives: Therapeutic Value of Garlic in Functional Gastrointestinal Disorders. F. Damrau and E. A. Ferguson.—p. 411.

Garlic in Functional Gastrointestinal Disorders.—Damrau and Ferguson point out that although the value of garlic as a carminative has been recognized since ancient times, few scientific studies on the modus operandi of carminatives have been published. Cushny in 1940 had suggested that the carminative oils cause a sensation of warmth on passing into the stomach; this is accompanied by a sense of well-being and comfort, and any feeling of distention after meals is relieved. This is often attended by eructation of quantities of gas. The authors believe that their studies have confirmed Cushny's theory. A preliminary roentgenographic study was undertaken to determine the effect of dehydrated garlic on gastrointestinal motility by comparison of the opaque residues with and without the garlic. The authors describe clinical studies and present reports which are representative of therapeutic results with complete symptomatic relief obtained with dehydrated garlic tablets. In this form garlic is highly effective for relief of heaviness after eating (epigastric and abdominal distress), belching, flatulence, gas colic and nausea. Satisfactory therapeutic results were obtained in cases of flatulent dyspepsia, nervous dyspepsia and other gastric neuroses. Roentgenographically a comparison of films of patients with and without the medication demonstrated that dehydrated garlic has a sedative action on the stomach and intestines, relaxes spasm, retards hyperperistalsis and disperses accumulations of gas. It is believed that these studies explain the carminative action of garlic as due to unidentified principles which have been designated as gastroenteric allichalone (allium, garlic; chalone, to relax). Since dehydrated garlic tablets are safe for long-continued use, they may be prescribed in a wide variety of functional disturbances of the stomach and intestines.

Surgery, Gynecology and Obstetrics, Chicago

88:689-806 (June) 1949

*Methods for Preservation and Transplantation of Arterial Grafts: Observations on Arterial Grafts in Dogs: Report of Transplantation of Preserved Arterial Grafts in 9 Human Cases. R. E. Gross, A. H. Bill Jr. and E. C. Peirce.—p. 689.
Testosterone Propionate in Treatment of Advanced Carcinoma of Breast. J. R. Watson and G. H. Fetterman.—p. 702.
Study of Peripheral Vascular Disease with Radioactive Isotopes: Part II. F. W. Cooper Jr., D. C. Elkin, P. C. Shea Jr. and E. W. Dennis. —p. 711.
Suture of Peripheral Nerves: Factors Affecting Prognosis. J. W. Kirklin, F. Murphey and J. Berkson.—p. 719.
*Stratification of Bile in Gall Bladder and Cholelithiasis. B. A. Campbell and A. C. Burton.—p. 731.
Vascular Changes of Skin in Pregnancy: Vascular Spiders and Palmar Erythema. W. Bean, R. Cogswell, M. Dexter and J. F. Embick. —p. 739.
Thoracic Complications of Amebiasis. R. R. Shaw.—p. 753.
Carcinoma of Nasopharynx: Report of 150 Cases. M. W. Simmons and I. M. Ariel.—p. 763.
Uncommon Tumors of Salivary Glands. M. C. Wheelock and T. J. Madden.—p. 776.
*Stimulation of Ovarian Function and Induction of Pregnancy Through Intravaginal Implantation of Estrogen Pellets. B. Zondek and S. Rozin. —p. 783.

Preservation and Transplantation of Arterial Grafts.—Gross and associates describe their work on quick-freezing grafts of the blood vessels and storing them at 70 C. In a second series they investigated the feasibility of preservation and use of heterografts. In the third series they investigated the preservation and use of homografts, storing the grafts at temperatures just above freezing in appropriate mediums. Segments of large arteries, or the aorta, were accumulated from human subjects who had died in automobile accidents. The vessels were removed within a few hours after death of the person, and in no instance was the lapse greater than five hours. The acquired segments of vessel—iliac, carotid, subclavian and aortic—were preserved in individual flasks and covered with balanced saline solution. These flasks were then stored at 1 to 4 C. Eight of these human grafts were implanted in patients who had a cyanotic type of congenital heart disease and in whom it was desirable to make some sort of a shunt of blood from the aorta or one of its branches into the pulmonary artery. Ordinarily it is possible to bring such vessels together for a direct anastomosis by the Blalock or the Potts technic, but sometimes such shunts cannot be made without excessive tension and in such a case a graft will allow arterial junctions to be made without tension and will give a result which is better than that which would have been obtained from a poor, direct anastomosis. These same general principles will probably also hold true for treatment of coarctation of the aorta. The use of an interposed graft may prove to be the most satisfactory method of reestablishing an aortic pathway of normal size. The validity of this statement is suggested by the result obtained in a case wherein a graft was used to repair an aortic defect after excision of a coarctation. Histories of 9 cases are presented. The authors feel that the promising results justify further trial and study.

Stratification of Bile in Gallbladder. — Campbell and Burton point out that, although the literature on the composition of bile in the gallbladder and on the concentrating action of that organ implies that its contents at any one time are homogenous, there has been roentgenologic evidence that a high degree of inhomogeneity of bile may exist in the human gallbladder in normal subjects as well as in patients with cholecystitis. Samples of bile withdrawn at different levels in dependent gallbladders of cats, cattle and some human beings were examined as to their specific gravity, concentration of pigments, viscosity and hydrogen ion concentration. A lack of homogeneity from top to bottom was the rule rather than the exception. Of 65 gallbladders of normal cattle, 60 per cent showed an increase in specific gravity, from top to bottom, of 0.005 to 0.023 unit. Changes in hydrogen ion concentration and in color index closely paralleled the changes in specific gravity. Changes in viscosity were not well correlated. The changes were often so abrupt as to show the existence of two or more distinct stratums. Neither the process of diffusion for as long as a week nor considerable mechanical agitation was able to mix these stratums. In 2 of the 5 human cases, cholesterol stones were floating at the level of the interspace between two stratums. A theory of the formation of such strata in terms of incomplete emptying of a gallbladder is suggested. The possibility is discussed that persistent stratification of bile may favor the precipitation of cholesterol stones.

Stimulation of Ovarian Function by Intravaginal Implantation of Estrogen Pellets. — Zondek and Rozin demonstrated experimentally that the activity of estrogenic hormone was greatly increased when the hormone was injected near its target organ, i. e., in the vaginal submucosa. They present case histories illustrating the effect of intravaginal implantation of estrogen pellets on primary and secondary amenorrhea. They stress that intravaginal implantation possesses the following advantages over subcutaneous administration: The effect is more constant; it is about five times as intense, and the tablets are seldom expelled. The effects of implantation are manifested in improved vascularization of the vagina, changes in the vaginal epithelium (cornified cells), uterine growth, proliferation of the uterine mucosa, uterine bleeding and enlargement of the breasts. The average interval between implantation and the onset of bleeding is seventy-eight days. The cycle may be reinitiated by a single intravaginal implantation, whereby the amenorrhea is relieved. Alternatively, several cyclic bleedings may occur, which are again followed by amenorrhea, requiring a second or third implantation. A second implantation is also indicated if no bleeding occurs within three to four months of the initial implantation. Doses ranged between 25 and 50 mg. of estrone or estradiol. Undesirable secondary effects, such as an excessively intense peripheral reaction involving glandular cystic hyperplasia of the uterine mucosa, sometimes accompanied with severe bleeding, may result. Although this may require treatment with progesterone or even curettage, this accessory effect should not discourage repetition of implantation of a smaller dose. The authors have employed their method of intravaginal implantation in 54 married women with amenorrhea of many years' duration, accompanied with severe secondary changes of the genital organs. Bleeding was induced in 84 per cent of the amenorrheic patients. In 8 of the treated patients, not only was the amenorrhea cured but pregnancy ensued.

Tennessee State Medical Assn. Journal, Nashville

42:147-182 (May) 1949

Menace of Socialized Medicine: Call to Action for Personal Privilege and Professional Liberty. H. W. Qualls.—p. 147.
Observations on Treatment of Benign Gastric Ulcer: Report of Case of Benign Gastric Ulcer Treated Medically. R. A. Cate.—p. 152.
Report of Fatal Case of Post-Vaccinal (Allergic) Encephalitis. J. T. Moore.—p. 157.

42:183-222 (June) 1949

Shelby County Doctors vs. Socialized Medicine. W. C. Chenay.—p. 183.
Early Diagnosis and Treatment of Carcinoma of Prostate Gland. P. Niceley.—p. 186.
Surgical Treatment of Malignant Lesions of Gastrointestinal Tract. J. H. Forsee and R. M. Hardaway.—p. 195.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

57:181-220 (May) 1949

Pregnancy and Cerebrovascular Complications: Report of 7 Cases. D. W. deCarle.—p. 181.
*Oral Basal Temperatures and Diagnosis of Pregnancy. H. L. Stewart Jr.—p. 192.
Two Case Reports of Sympus. J. G. Busby.—p. 201.
Surgical Treatment of Carcinoma of Esophagus and Cardia. H. L. Thompson.—p. 205.
Carcinoma of Prostate. O. J. Jensen Jr. and J. A. Moore.—p. 210.

Oral Basal Temperatures in Pregnancy.—Stewart states that the oral basal temperatures in women with a normal menstrual cycle show a biphasic curve characterized by a lower preovulatory (estrin) phase followed by an elevated postovulatory phase (progestin). Oral basal temperature curves in the event of pregnancy show a continuation of the postovulatory elevation. There is a gradual drop in this level in most cases during the third month to a level of 98 F., with wide daily fluctuations. This gradual fall continues, so that the preovulatory level is reached by the fourth or fifth month of gestation and remains until delivery. Because of the gradual fall in basal temperatures during pregnancy, the oral basal temperature is of valuable diagnostic aid only during the first trimester. The accuracy of the test is as great as the accepted biologic tests for pregnancy, but it must be used in conjunction with physical examinations and clinical judgment. Basal temperature should be taken for at least seven consecutive days. Oral basal temperatures of 98.2 F. or above for seven consecutive days in the absence of an abnormal temperature rise at other periods of the day favors a clinical diagnosis of pregnancy. A temperature of 97.6 F. or below is against a diagnosis of pregnancy. The accuracy of the test in their series of 425 cases was 97.5 for cases with positive results and 99 per cent for the cases with negative results.

West Virginia Medical Journal, Charleston

45:101-124 (May) 1949

Curare in Anesthesia. J. F. Morris.—p. 101.
Use of Base-In Prisms in Treatment of School Myopia. O. B. Nugent. —p. 103.
Management of Compound Fracture. W. Bronaugh.—p. 106.
Ureterocele with Prolapse Through Urethra: Case Report. A. J. Oliker. —p. 109.

45:125-158 (June) 1949

Anthracosilicosis and Its Symptomatic Treatment. B. Gordon, H. L. Motley, P. A. Theodos and L. P. Lang.—p. 125.
Approach to X-Ray Film. K. J. Myers.—p. 133.
Pathologic Conscious States. E. F. Reaser.—p. 136.
Diagnosis and Management of Complications of Peptic Ulcer. H. Acuff. —p. 141.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Brain, London

72:1-112 (March) (Part I) 1949

Muscle Spindles in Human Extrinsic Eye Muscles. Sybil Cooper and P. M. Daniel.—p. 1.
Amyotonia Congenita. J. W. A. Turner.—p. 25.
Proprioception and Motor Cortex. E. Gellhorn.—p. 35.
Significance of Tinel's Sign in Peripheral Nerve Injuries. J. R. Napier.—p. 63.
*État Marbré of Thalamus Following Birth Injury. R. M. Norman.—p. 83.
Disorders of Body Image Caused by Lesions of Right Parietal Lobe. M. Roth.—p. 89.

Marble State of Thalamus Following Birth Injury.—Norman reports a case in which "marble state" of the thalamus was present in conjunction with other lesions the result of vascular damage occurring at birth. The patient was a male idiot with cerebral diplegia who died at the age of 5 years and 3 months. The infant was born prematurely and weighed 5 pounds (2,495 Gm.). There was a history of severe asphyxia at the time of birth and twitchings of the hands and face observed on the fifth day of life. He appeared to be blind and had pale optic disks. Although a slight improvement was noted in the infant's physical progress, he was never able to stand or sit up because of a symmetric spastic paresis which affected the legs more than the arms. There were occasional seizures of a tonic type. Examination of the brain revealed a bilateral "état marbré" (marble state) of the thalamus and conspicuous areas of softening in each centrum semiovale adjacent to the lateral ventricles. The pyramidal tracts at medullary level were of the size and degree of myelination approximately appropriate for a newborn infant. The optic radiations and the external geniculate bodies showed partial destruction and there was an apparent increase in the neuroglial fibrils of the optic nerves and optic papilla. It was concluded that the lesions of the thalami and central white matter, which lay within the drainage area of the great vein of Galen, were late neuropathologic sequelae of birth injury.

British Journal of Ophthalmology, London

33:329-396 (June) 1949. Partial Index

Diseases of Eye in Relation to Dental Surgery. J. H. Doggart.—p. 338
Concentration in Aqueous of Various Sulphonamides After Systemic Administration. A. Sorsby.—p. 347.
Significance of Ocular Complications Following Vaccination. E. Rosen.—p. 358.
Treatment of Hypopyon Ulcer of the Cornea. E. H. Cameron.—p. 368.
Modern Views of Surgery of the Cornea. M. S. Bey.—p. 372.
Injection of Retinal Vascular System in Enucleated Eyes. I. C. Michaelson and H. F. Steedman.—p. 376.
*Lacrimal Strip and Precorneal Film in Cases of Sjögren's Syndrome. M. Klein.—p. 387.

Precorneal Film in Sjögren's Syndrome.—Klein quotes Wolff's suggestion that the precorneal film has a triple structure, consisting of a deep mucoid layer, an intermediate lacrimal watery layer and an oily layer. The mucous layer derives from the goblet cells of the conjunctiva, the watery layer from the lacrimal glands and the oily layer from the tarsal glands. The lacrimal layer is responsible for the brightness of the corneal surface. An accumulation of this watery layer, the marginal strips, can be seen in the gutter formed by the lid margins. Sjögren has pointed out that in keratoconjunctivitis sicca the conjunctiva and cornea lose their brightness. Klein studied the lacrimal strip in several patients with this disorder. Although Schirmer's test indicated considerable reduction of lacrimal secretion in all the cases studied, the marginal strips of tear fluid were present. The precorneal film lacked the easy-flowing, flexible appearance of the normal film and was rather viscous. The precorneal film seemed to be composed of the usual three elements, but the mucoid component apparently predominated over the lacrimal film. Whether this was due to diminished lacrimal secretion alone, or the composition of the tear fluid was altered as well, needs further investigation. According to Ridley, the protein content of the tears is reduced in Sjögren's syndrome. This may be significant, as the surface tension of the tears is influenced by the protein content.

British Journal of Venereal Diseases, London

25:45-100 (June) 1949

Medical Conduct of a Brothel. F. R. Bettley.—p. 56.
Modern Interpretations of Serum Tests. I. N. Orpwood Price.—p. 67.
Syphilis Antigen from Soya Bean. J. S. Stevenson.—p. 78.
Gonorrhea and Sulphonamides. E. M. C. Dunlop.—p. 81.
Advertisements on Treatment of Venereal Disease and Social History of Venereal Disease. A. Fessler.—p. 84.

British *Medical* Journal, London

1:969-1018 (June 4) 1949

Surgical Aspects of Meningitis. H. Cairns.—p. 969.
Ayerza's Disease, Silicosis and Pulmonary Bilharziasis. H. Tidy. p. 977.
*Incidence of Cancer of Uterine Cervix. R. G. Maliphant.—p. 978.
Psychiatric Patients and Disabled Persons (Employment) Act. A. Harris and M. A. Lane.—p. 982.
Phyto-Photo-Dermatitis. H. E. Bellringer. p. 984.
Prognosis and Treatment of Sprue in India. K. D. Keele.—p. 986.

Cancer of Uterine Cervix.—Maliphant attempted to ascertain the incidence of uterine cancer together with the relative probabilities of the disease developing in the various age, social state and parity groups of the population. Studies were made on 1,200 women with cancer of the uterine cervix, and certain of their characteristics were compared with the distribution of the same characteristics in the community. Cancer of the cervix is a disease of middle life, but the risk of contracting the disease continues to rise until the age of 60. Beyond this age the risk shows a steady decline: while the female population is decreasing, the incidence of cervical cancer is decreasing at a faster rate. The cancer hazard is increased by marriage irrespective of childbearing, but the disease shows a predilection for women who have borne one or more children. Its occurrence seems to be independent of the nature of the confinement, but each pregnancy adds slightly to the risk that cancer may develop in later years. In women of cancer age (35 to 64 years) the probability of the disease developing in any one year seems to range from 1 in 21,000 single women, through 1 in 6,500 in childless married women to 1 in 1,500 in parous women. There is little prospect of effecting any appreciable reduction in the incidence of the disease by prophylactic measures. The pressing need is diagnosis at a stage when cure is not only possible but probable by existing therapeutic methods. The role of periodic health examinations in the detection of symptomless cervical cancer is discussed.

Journal of Neurol., Neurosurg. & Psychiatry, London

12:81-166 (May) 1949

"Integration, Then and Now." E. G. T. Liddell.—p. 81.
Fate of Intraneural Injection as Demonstrated by Use of Radio-Active Phosphorus. J. B. Brierley and E. J. Field.—p. 86.
Metachromatic Bodies in Brain. M. C. Smith.—p. 100.
Electrical Activity of Neostriatum, Paleostriatum and Neighboring Structures in Parkinsonism and Hemiballismus. R. Meyers, R. Hayne and J. Knott.—p. 111.
Duration and Form of Action Potential in Normal Human Muscle. I. Petersén and E. Kugelberg.—p. 124.
Electromyography in Muscular Dystrophies: Differentiation Between Dystrophies and Chronic Lower Motor Neurone Lesions. E. Kugelberg.—p. 129.
Anterior Inferior Cerebellar Artery: Its Variations, Pontine Distribution, and Significance in Surgery of Cerebello-Pontine Angle Tumors. W. J. Atkinson.—p. 137.
*Some Unusual Complications of Herpes Zoster. C. W. M. Whitty and A. M. Cooke.—p. 152.
Pinealoma with Solitary Spinal Metastasis. F. R. Magarey and H. R. I. Wolfe.—p. 155.
Hysteria in One of a Pair of Identical Twins. J. H. Paterson.—p. 160.

Complications of Herpes Zoster.—Whitty and Cooke describe 3 patients with herpes zoster, all of whom showed myelitis as a complication of the infection. Two had recurrent attacks of zoster in different skin zones over a period of two or three months, thus showing a difference from the usual behavior of the zoster virus, which confers lifelong immunity by a single attack. The authors consider the possibility that these were really cases of herpes simplex. The third patient had a zoster infection precipitated by injury to the fifth nerve. This case exemplifies a "symptomatic" zoster, secondary to peripheral trauma of the fifth cranial nerve. This is not uncommon after involvement of the first sensory neurone, especially at root level, by secondary neoplasm or tuberculous granuloma.

Its cause is generally supposed to be the zoster virus, trauma being only a precipitating factor. Such a view is supported in this case by the sequel of midbrain encephalitis, inexplicable on a purely traumatic basis.

Lancet, London

1:943-986 (June 4) 1949

Deep Pain Sensibility. J. H. Kellgren.—p. 943
*Ligation of Common Carotid Artery: Report of 19 Personal Cases L. Rogers.—p. 949.
Serologic Diagnosis of Human Toxoplasmosis. A. Macdonald.--p. 950.
Replacement Transfusion: Technic in Newborn. J. W. Farquhar and I. C. Lewis.—p. 953.
*Sensitisation of Penicillin-Resistant Pathogens M. George and K. M. Pandalai.—p. 955.
Anuria Following Ischemia of Renal Cortex. A. Solymoss.—p. 957.
Thyrotoxicosis with Ophthalmoplegia, Myopathy. Wolff-Parkinson-White Syndrome and Pericardial Friction. J. A. Strong p. 959.

Ligation of Common Carotid Artery.—According to Rogers, ligation of the carotid artery may produce complications either because of immediate cerebral ischemia or because of delayed embolism or thrombosis. These dangers may to a large extent be avoided by ligating the common rather than the internal carotid artery and by section of the artery rather than tying it in continuity. Division of the artery not only severs the accompanying sympathetic fibers and abolishes spasm and prevents recanalization but also reduces the liability to delayed embolism, since the distal retracted part of the artery, which may contain clot at the site of the ligature, is no longer subjected to the pulse wave, as it must be if the artery is tied in continuity. It is therefore important to divide the artery between ligatures. From experiences on 19 patients in whom the author has ligated the common carotid artery without mishap combined with a review of recently published cases he concludes that it is safe to divide the great vessel in the neck. Experience of delayed hemiplegia in 1 case of internal carotid ligation along with a series of cerebral complications and fatalities in recently published cases of ligation of this artery in the neck leads the author to assert that ligation of the internal carotid artery as a primary procedure is dangerous. If it is proposed to ligate the internal carotid in the neck, the common carotid should first be divided and then, some weeks or months later, the internal artery resected. By so doing not only is a collateral circulation encouraged to develop in the circle of Willis but also precautions are taken against delayed complications.

Sensitization of Penicillin-Resistant Pathogens.—George and Pandalai previously reported the difference in susceptibility of certain pathogens to penicillin associated with differences in their metabolic reactions as well as with the presence or absence of certain catalytic systems. They found that magnesium ions can render certain gram-negative penicillin-resistant pathogens, such as Escherichia coli, sensitive to penicillin. Thus clear sensitivity to penicillin seems to depend essentially on a chemical or metabolic factor. To confirm this the authors grew penicillin-sensitive and penicillin-resistant organisms together, isolated them, and ascertained the least amount of penicillin needed to inhibit growth of the strains so isolated. They describe five experiments and stress that the growing of penicillin-sensitive and penicillin-resistant organisms together may cause the penicillin-resistant organisms to become penicillin-sensitive. Growth together for half an hour at 37 C. is in some cases sufficient to induce such sensitivity. The acquired sensitivity lasts a fairly long time. Their earlier postulate that complex catalytic systems are present in pathogens and are responsible for either sensitivity or resistance to penicillin is supported by these results. The factor responsible for the sensitivity to penicillin is a labile constituent of the bacterial cell probably the ribonucleic acid.

Medical Journal of Australia, Sydney

1:633-668 (May 14) 1949. Partial Index

Rh Antibody Specificities Found in 115 Human Anti-Rh Serums. R. T. Simmons.—p. 633.
Clinical Value of Liver Function Tests. K. S. Hetzel --p. 636
Testing for Rh Factor in Blood of Emergency Patients. V. I. Krieger, S. Weiden and I. O'Loughlin.—p. 646.

Archivum Chirurgicum Neerlandicum, Arnhem

1:1-88 (No. 1) 1949. Partial Index

*Pericardiectomy for Constrictive Pericarditis. L. D. Eerland.—p. 6.
Surgical Treatment of Carcinomata of Distal Three Quarters of Thoracic Esophagus and Cardia. J. F. Nuboer.—p. 14.
So-Called Primary Enterococcal Peritonitis. J. Kweekel.—p. 38.
Retropubic Prostatectomy of Terence Millin. J. A. Weijtlandt.—p. 43.
*Androgen-Control Therapy in Carcinoma of Prostate. H. Muller.—p. 77.

Pericardiectomy for Constrictive Pericarditis.—Eerland reports 14 cases in which an operation was performed to correct constrictive pericarditis. Three of the patients died during operative intervention and 1 died two days after the operation. The deaths occurring during operation resulted from piercing of the heart muscle, which apparently had become too brittle. Five patients were cured and 2 were greatly improved. In 1 patient the early results were good, but he could not be traced. Some of those in whom a cure was obtained have survived four, five and six years. Since the ultimate result depends largely on the condition of the heart muscle and the liver, it is important that the pericardiectomy be not unnecessarily delayed. In the presence of tuberculosis operative intervention should be deferred until the symptoms of the activity of the inflammation have disappeared. It is advisable to limit the intervention to partial pericardiectomy above the ventricles. Intratracheal narcosis offers advantages over local anesthesia. In the series described a parasternal extrapleural approach was selected.

Androgen-Control Therapy in Carcinoma of Prostate.—According to Muller androgen-control therapy is based on the premise that prostatic carcinoma can develop or extend further only in the presence of a specific stimulating factor, such as androgenic hormone. Treatment is instituted with the object of inhibiting or abolishing the production of androgen. Roentgen irradiation of the organs governing the production of androgen, orchiectomy and treatment with estrogen have been the methods used to achieve control of androgen and with it the control of prostatic cancer. Recently most investigators have come to the conclusion that a combination of orchiectomy with estrogen therapy will produce the best results. Orchiectomy removes the main source of androgen, while administration of estrogens suppresses the extragonadal production of androgen. From 5 to 10 mg. of diethylstilbestrol is given daily, if the prostatic carcinoma causes no pain. If there are signs of recurrence, the author advises castration together with 1 to 3 mg. of diethylstilbestrol. The same treatment with possibly an increase in the dosage of the endocrine substance is advised if metastases cause pain. In the presence of recurrence, increase in the dose of diethylstilbestrol should be combined with roentgen irradiation. Transurethral resection should be performed if obstructive signs do not yield to other measures. Regular follow-up of the phosphatase level and the sedimentation rate of the patient is necessary so that increase in the dosage of diethylstilbestrol or castration can be decided on early. The main obstacle to the adoption of a definite scheme of treatment is the wide variation in the reactions of different patients.

Deut. Ztschr. f. Verdauungs-& Stoffwechselkr., Leipzig

9:113-160 (April) 1949

Sulfaguanidine in Treatment of Acute and Chronic Diarrheas of Non-Infectious Origins. N. Henning and H. Stadler.—p. 113.
Treatment of Intestinal Tuberculosis with Thiosemicarbazon. F. Kuhlmann and H. Schütt.—p. 124.
*Esophago-Gastro-Enterocolitis (Intestinitis Gravis) with Necrotic Tendencies: High Incidence During Period from 1946 to 1948. K. Kloos.—p. 141.

Esophagogastroenterocolitis (Intestinitis Gravis).—Kloos directs attention to an intestinal disorder which occurred in epidemic proportions during 1946 to 1948 in a part of northern Germany, particularly in the region of the cities Hamburg, Lübeck and Kriel and in Schleswig-Holstein. The author had the opportunity to make necropsy or biopsy studies in 173 cases. Bacteriologic studies were made at the university of Kiel in about 100 cases. The cell structure of the lesions varied greatly. After describing the morphologic aspects and the localization of the lesions, the author discusses the relationship between the clinical aspects and the four stages of the diseases: (1) catarrhal serous enteritis; (2) necrotizing enteritis; (3) ulcerous enteritis, and (4) chronic suppurative granulomatous enteritis. Possible complications are listed. The time, cause and frequency of the fatal outcome are discussed in relation to the progress of the disease and to the therapeutic measures employed. When cases of this intestinal disorder were first observed interpretation proved difficult, although the disease has been mentioned for over a hundred years in the world literature under a great variety of terms, such as nonspecific, deep-seated enterogenic inflammation of the intestinal wall; enterocolitis phlegmonosa; necrotic enterocolitis, and enterocolitis submucosa suppurativa. The problem of terminology becomes even more confusing when processes localized in certain sections of the intestine are considered. In this connection the author cites regional or terminal ileitis (Crohn's disease) and similar changes in the large intestine referred to in the French literature as inflammatory tumors and in other reports as inflammatory tumors or stenoses. Since the cause of the disease is not definitely known, and in view of the varied morphologic manifestations, the author suggests the term intestinitis gravis. Observations indicate that the disease is an infectious process, but the author doubts that the bacteria considered by some, such as the anaerobic Bacillus fundiliformis, or an organism of the Welch-Fränkel type, are really the causative organisms. He assumes that a virus or a virus and bacteria may play an etiologic part.

Medicina, Buenos Aires

9:1-84 (Feb.) 1949. Partial Index

*Sympathectomy in Primary Arterial Hypertension: Late Results. T. Padilla, P. Cossio and J. A. Berreta.—p. 19.
Artificial Aortic Valve; Experiments in Animals. I. Perianes and J. A. Berreta.—p. 29.

Sympathectomy in Arterial Hypertension.—Padilla and collaborators report on bilateral extensive sympathectomy performed on 27 patients with essential arterial hypertension. The patients were observed for several years before the operation and for two to three years after. Frequent examinations were made. The cases were divided into three groups: very favorable, favorable and unfavorable for surgical intervention, according to age, reaction to sedatives, ophthalmoscopic examination and visceral changes. The failure or success of the operation was judged by the survival, the appearance or disappearance of cardiac, renal or cerebral disturbances, changes in the fundus of the eye and the arterial pressure. Three of the patients showed improvement, 11 remained unchanged, 5 grew worse and 8 died as the result of the illness.

Medizinische Klinik, Munich

44:657-688 (May 27) 1949. Partial Index

*Experiences with Penicillin in 370 Syphilitic Patients. C. M. Hasselmann.—p. 657.
*Streptomycin for Conservation of Human Milk: Clinical Experiences. F. Linneweh.—p. 666.
Symptomatology of Primary Tuberculous Infection in Adults. R. W. Muller.—p. 671.
Prescription of Digitalis. H. von Hoesslin.—p. 672.

Penicillin in Treatment of Syphilis.—On the basis of observation in 370 cases, Hasselmann believes that penicillin therapy is superior to any other treatment of syphilis, both as to the reliability of cure and the avoidance of untoward secondary effects such as those associated with arsphenamine therapy. The advantages of penicillin therapy should not tempt physicians to commence its administration before the diagnosis of syphilis has been definitely established or to give it in inadequate doses. Treatment with penicillin greatly reduces the period of infectiousness of syphilis and thus eliminates the sources of infection and the spread of the disease. The use of "depot" penicillin, particularly in the form of crystalline procaine penicillin G in 2 per cent aluminum monostearate, makes possible ambulatory treatment of syphilis, but at the same time it involves the danger of inadequate treatment and the temptation on the part of the patients to regard their infection with syphilis as something of little importance and danger. The cardiolipin-lecithin antigens used at Hasselmann's clinic largely eliminate false positive reactions; at the same time they make possible the quantitative follow-up of the serum titers of the patients during the course of treatment.

Streptomycin in Conservation of Human Milk.—Linneweh stresses that the coli flora in human milk cannot be disregarded. This flora and the souring process was formerly counteracted chiefly by heat sterilization. Since this type of sterilization involves certain disadvantages, the suggestion of Ploetschke to add streptomycin to the milk was accepted. American investigators used streptomycin by mouth in the treatment of children with gastrointestinal disturbances. For more than six months the author studied the use of human milk to which streptomycin had been added. Bacteriologic considerations had determined the addition of 2 mg. (20 units) of streptomycin per hundred cubic centimeters of milk. So far 25 nurslings have been fed with this type of breast milk, comprising either part or all of their feedings, for an average of forty days and for as long as one hundred days. Toxic effects did not result from the streptomycin content of the milk even in the prematurely born infants. From the standpoint of nutritional physiology, milk conserved by the addition of streptomycin is superior to that preserved by heating. Furthermore, the addition of streptomycin to human milk permits simplification of the process of collecting it and increases the supply by reducing spoilage.

Schweizerische medizinische Wochenschrift, Basel

79:465-488 (May 28) 1949. Partial Index

Organization of Mass Examinations by Means of Fluorescent Screen Pictures. H. Birkhäuser.—p. 465.
Automatic, Endogenous, Lymphadeno-Bronchogenous Reinfection in Initial Period of Pulmonary Phthisis and Its Typical Sequelae (Concluded). P. Schwartz.—p. 467.
*Congenital Aneurysm of Basal Cerebral Arteries and Polycystic Kidneys. W. Suter.—p. 471.

Congenital Basal Cerebral Aneurysm and Polycystic Kidney.—Suter reports simultaneous occurrence of congenital aneurysm of basal cerebral arteries and polycystic kidney in 10 men and 5 women between the ages of 24 and 56, mentioned in the literature. He reports 2 cases of his own, 1 in a woman aged 56 and 1 in a man aged 36. There seems to be a slight preponderance in the male sex. Both conditions are malformations. Multiple malformations in the same person are considered characteristic of all malformations. Twenty-seven cases of congenital aneurysm of basal cerebral arteries were observed in a series of 5,960 necropsies performed at the pathologic institute of the cantonal hospital in St. Gallen, Switzerland, from 1941 to 1947. In 2 instances in which a congenital aneurysm of the cerebral vessels was demonstrated, there were associated polycystic kidneys. In both of the author's cases death resulted from spontaneous subarachnoid hemorrhage due to rupture of congenital aneurysm of the anterior communicating artery. Bilateral polycystic kidneys were observed in both cases. Both malformations may be placed within the nosologic frame of Bard's syndrome of idiopathic dilatations; or according to Snapper and Formijne they may be interpreted as simultaneous failures in junction of two systems growing toward one another. The prognosis is unfavorable in congenital aneurysm of basal cerebral arteries associated with polycystic kidneys, because of the possibility of a precocious rupture due to nephrogenic hypertension.

Ugeskrift for Laeger, Copenhagen

111:465-496 (April 28) 1949

Extrauterine Pregnancy. Analysis of 109 Cases. A. Christensen.—p. 465.
*Treatment of Abortion with Special Regard to Value of Sulfonamide in Febrile Abortion. E. Østergaard.—p. 496.

Sulfonamide Drugs in Febrile Abortion—During the past four years Østergaard encountered 1,982 cases of abortion; 661 of the patients were febrile. There were 4 deaths. Febrile abortions are complicated secondarily in about one fourth of the cases by inflammation outside of the uterus, which in many cases leaves permanent sequels. The number of these secondary complications can be limited by the introduction of sulfonamide treatment as early as possible in combination with moderately active treatment for conditions related to the abortion. Careful after-examination of abortion patients is important in order that adnexal disorders setting in after the abortion may be discovered and given early treatment.

Book Notices

Clinical Auscultation of the Heart. By Samuel A. Levine, M.D., Clinical Professor of Medicine, Harvard Medical School, Boston, Mass., and W. Proctor Harvey, M.D., Assistant in Medicine, Peter Bent Brigham Hospital, Boston. Cloth. Price, $6.50. Pp. 327, with 286 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W C.2, 1949.

With the introduction in recent years of so many mechanical aids in cardiac diagnosis, a book which sets forth the information that may be gained by simple auscultation is refreshing. Chapters are devoted to heart sounds, cardiac irregularities, cardiac murmurs and miscellaneous auscultatory findings. Along with a description of the acoustic phenomena are heart sound tracings and electrocardiograms. The authors emphasize that these tracings are unnecessary in general practice but are used in the text to illustrate what has been heard and to help visualize the points discussed. They show how by careful auscultation one may be able to make many diagnoses at the bedside without resort to the roentgenogram or the electrocardiogram. In the words of the authors, "When the cost of medical care is necessarily increasing, it is imperative to derive all possible help from such an inexpensive and expedient tool as the stethoscope."

This treatise can be read with profit by every physician who is interested in cardiac diagnosis and is to be especially recommended to the younger physicians to many of whom cardiac auscultation is practically a lost art.

Exploration radiologique de l'appareil urinaire inférieur (vessie, urètre, prostate). Par Bernard Fey, Fernand Stobbaerts, Pierre Truchot et Georges Wolfromm. Avec la collaboration de Léonce Sabadini et al. Paper. Price, 2500 francs. Pp. 291, with 293 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6^e, 1949.

The authors deal with radiologic examination of the bladder, urethra and prostate in eleven chapters. The first sentence in the opening chapter on cystography stresses a point of ancient vintage, but one in need of constant repetition: "L'examen radiologique de la vessie demande la collaboration de l'Urologue et du Radiologue. . . ."

The first part of the book deals with the authors' technic of cystography, urethrography and combined methods of examination. The second part deals with bladder abnormalities, disturbances of bladder tone, calculi and foreign bodies, inflammatory lesions of the bladder and urethra, dysfunctions of the bladder neck, traumatic lesions of the urethra and bladder, bladder tumors, fistulas and postoperative conditions.

The figures illustrating the traumatic and fistulous lesions of the urethra and bladder are some of the best in the book. The use of double contrast micturition technic for studying the urethra seems to be something of a *tour de force*. The authors do not stress the differential diagnosis between edema of the trigone and intravesical enlargement of the prostate as much as they might. With these minor exceptions, the monograph can be heartily recommended.

Some readers are said to take great pleasure in cutting the pages of a new text; others wish that the printers would attend to this manual chore. With cut pages and a board cover, this monograph would perhaps have greater usage and longer life.

Searchlights on Delinquency: New Psychoanalytic Studies Dedicated to Professor August Aichhorn, on the Occasion of His Seventieth Birthday, July 27, 1948. Managing Editor: K. R. Eissler, M.D., Ph.D. Chairman of the Editorial Board: Paul Federn, M.D. Cloth. Price, $10. Pp. 456. International Universities Press, Inc., 227 W. 13th St., New York 11, 1949.

As an international tribute to August Aichhorn, many of his colleagues prepared this symposium. It represents a psychoanalytic study of the aspects of delinquency, beginning with its causes and general problems and proceeding through social psychology, penology and surveys. The book concludes with a bibliography of Dr. Aichhorn's writings, which are largely concerned with wayward youth. The work will be especially interesting to readers informed on psychoanalysis. The subject is still in an early investigational stage, and readers will find many differences of opinion and points of view.

A Textbook of Practical Nursing. By Kathryn Osmond Brownell, R.N., B.S., Supervisor of School Nursing Service, Connecticut State Board of Education, Hartford, Conn. Third edition. Cloth. Price, $3.75. Pp. 465, with 51 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1949.

The author states that this third edition has been revised to include methods and information suggested by the Working Committee on Practical Nurse Training as outlined in the publication "Practical Nursing" (United States Office of Education). Emphasis is placed on the nursing care of the patient, with only brief reference to the household responsibilities commonly associated with the duties of the practical nurse. The statement "There are cases which, due to financial conditions, require housework of the practical nurse in addition to patient care" suggests a changing concept of the function of the practical nurse and appears to indicate that in some respects she is approaching the role of the graduate of a professional school of nursing.

The fact that so much space is devoted to details on the personal habits of the practical nurse, including such matters as bathing and how to spend her free time and her money, suggests that the book is written for a person with a limited background of education, training and experience. The author has attempted to cover all phases of nursing and to use simple terms. In doing so, she has dealt with some subjects so briefly as to sacrifice clarity and in a few instances accuracy. For example, it is stated, "The function of the tonsils is to drain the back of the throat." The chart on communicable diseases reprinted by permission of the New York State Department of Health is the 1943 edition rather than the more recent one of 1948, in which several changes were made to bring it up to date.

The practical nurse is being prepared primarily for giving care to the "subacute, convalescent and chronically ill patient." Since this is so, the book would be much more useful if it included a more detailed discussion on these aspects of illness, particularly the nursing care needed in the chronic diseases. The book is not comprehensive enough to be recommended for general use in the more progressive schools of practical nursing.

Clinical Allergy. By Louis Tuft, M.D., Assistant Professor of Medicine, Temple University School of Medicine, Philadelphia, Pa. Second edition. Cloth. Price, $12. Pp. 690, with 57 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

The popularity of the first edition of this book was such that it has not been readily available for several years. The author has accomplished a most difficult task by improving an excellent work. Although the number of pages is reduced from 711 to 690, the revision is thorough and includes the most important advances made since the first edition was published in 1937. The book was kept within the original size by the elimination of statistical data, the reduction of the bibliography to general references at the end of the book and by careful editing. The elimination of redundant expressions has led to conciseness and increased clarity.

The organization used in the first edition is maintained with only slight revision because of the added chapters on allergy to fungi and a rearrangement of other material. The book is divided into four sections. The first deals with the fundamental principles of allergy and anaphylaxis. It includes a thorough discussion of the principles of diagnosis and treatment of allergic conditions. Part 1 discusses the various allergic conditions with reference to etiology. Part 3 discusses in seven chapters the various clinical syndromes of allergy with the exception of the dermatoses. In part 4 the allergic dermatoses, allergy in children and allergy in relation to other specialties are discussed. The appendix includes a variety of useful information to the specialist in allergy—laboratory methods in anaphylaxis and in allergy, directions to patients, lists of foods and a variety of miscellaneous information useful primarily to the specialist.

The book was originally aimed specifically for the medical student, the general practitioner and other physicians who are interested in allergy as a peripheral rather than a major field. It is not written as a reference work for the man who is already trained in allergy. Tuft has succeeded in a thorough revision and improvement of a good book.

Les symptômes de la tuberculose pulmonaire et de ses complications: Clinique, physiologie pathologique, thérapeutique. Par Edouard Rist médecin honoraire de l'Hôpital Laennec, Paris. Second edition. Paper Price, 1800 francs. Pp. 983, with 22 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1949.

The first edition of this book was published in 1943. It was thoroughly revised and enlarged by about 400 pages for the 1949 edition. It is an authoritative and extensive presentation (983 pages) of the symptoms of pulmonary tuberculosis and its complications. The book contains fifty chapters grouped into three parts. The first, consisting of eighteen chapters, is devoted to functional symptoms. Cough with reference to cause, treatment and other aspects is discussed in 22 pages. Another chapter is limited to expectorations, including various types of examination of sputum. Four entire chapters deal with blood spitting and frank hemorrhage. Whole chapters are given to voice disturbances and chest pains. Dyspnea and its various aspects are presented in six chapters, consisting of 123 pages. All causes and therapeutic procedures are included.

Part II, on general symptoms, consists of eleven chapters on such subjects as cyanosis, fever, sweat and weight loss. Part III constitutes approximately the last half of the book and is devoted to symptoms of complications and the like. Five chapters deal with gastrointestinal symptoms, including rectal fistulas. Edema and its various causes and treatments, trigeminal nerve disturbances, erythema nodosum, menstrual disorders and pregnancy are a few of the many subjects which are thoroughly discussed.

This book contains a thorough presentation of the symptoms of pulmonary tuberculosis and its complications and the modern methods of controlling them. The author is one of Europe's finest authorities on the subject.

Leisure and Recreation: A Study of Leisure and Recreation in Their Sociological Aspects. By Martin H. Neumeyer, Ph.D., Professor of Sociology, University of Southern California, Los Angeles, and Esther S. Neumeyer, A.M. Second edition. Cloth. Price, $4.50. Pp. 411 A. S Barnes & Company, 101 5th Ave., New York 3, 1949

This volume is timely; an inevitable result of our technical progress is more free time for leisure and recreation.

Adequate orientation is provided by chapters on development of leisure and recreation, the recreation movement in this country and other lands, world trends in recreation and conditioning factors in leisure and recreation. Especially helpful is a chapter on leisure and personality, in which reaction of the individual to opportunities offered by increased leisure is discussed. Thought must be given frequently to preparing large segments of our population for leisure if they are to use it and not abuse it One facet of this problem is treated in a later chapter on recreation and social maladjustment.

The place of public, semipublic and private agencies in development and furtherance of community recreations is described in detail in two chapters. Of considerable value is a chapter on the need for recreation leaders, with emphasis on qualifications and professional training of such leaders. In the final chapter are found important suggestions on methods of research. Inclusion at the end of each chapter of a special section on projects and exercises, as well as lists of selected references, makes the volume a working instrument as well as an important source of general information on this subject.

Gynécologie. Par Albert Netter. Collection médico-chirurgicale à révision annuelle. Directeur général: Pasteur Vallery-Radot. Secrétaire général: Jean Hamburger. Cloth. Loose-leaf. Pp. 762, with 178 illustrations. Ernest Flammarion, 26 rue de Vaugirard, Paris 6e, 1949.

This book is one of a series dealing with medical and surgical subjects. It is in loose leaf form and is to be revised annually as are the other volumes in the series. The book is divided into three parts. The first deals with anatomy and physiology of the genital organs, the second with genital pathology and the third with the mammary gland. The book follows the plan used in most textbooks dealing with gynecology except for the addition of the 107 pages devoted to the breasts. Properly speaking, the breasts are within the province of the gynecologist. Certainly at the time of every bimanual pelvic examination, the breasts should also be carefully examined. There are only 178 illustrations, which is a small number for a textbook of 762 pages. Most of the illustrations are photomicrographs of tissue. At the end of each chapter is a well selected list of references in several languages, and at the end of the book there is a list of authoritative books on gynecology and related subjects. The index is excellent.

The author is one of the leading gynecologists in France, and it is obvious that the book is based on his extensive experience as a practicing gynecologist, and as a pathologist. The advice given for nearly all the disturbances described is in accord with the universal opinion of specialists in gynecology. The language is simple and direct; for those who can read French, the book is highly recommended.

The 1948 Year Book of Pathology and Clinical Pathology. Pathology. Edited by Howard T. Karsner, M.D., Professor of Pathology, Director of the Institute of Pathology, Western Reserve University, Cleveland, Ohio. Assistant Editor: Herbert Z. Lund, M.D., Assistant Professor of Pathology, Western Reserve University. Clinical Pathology. Edited by Arthur Hawley Sanford, M.D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation), Rochester, Minn. Cloth. Price, $4.50. Pp. 538, with 127 illustrations. The Year Book Publishers, Inc, 304 S. Dearborn St., Chicago 4, 1949.

The first portion includes abstracts in general pathology, tumors and special pathology by different systems. Of particular interest are the special articles by different authorities on such subjects as the evaluation of exfoliative cytology in tumor diagnosis; pulmonary berylliosis, iron metabolism and the interrelation of vitamin B_{12} and other factors to macrocytic anemia.

The clinical pathology section includes recent contributions to hematology, clinical chemistry, serology, bacteriology, mycology and parasitology. The authors are to be commended for their selection of practical subjects and articles that will be of interest to the clinician as well as the pathologist. Articles contributed by clinical workers are included in which the laboratory findings are discussed not only in relation to diagnosis but also to therapy of the disease.

The Compleat Pediatrician: Practical, Diagnostic, Therapeutic and Preventive Pediatrics for the Use of Medical Students, Internes, General Practitioners, and Pediatricians. By Wilburt C. Davison, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, Durham, N. C. Sixth edition. Cloth. Price, $4.75. No pagination. Duke University Press, College Station, Durham, N. C., 1949.

This unique book, now its sixth edition, has enjoyed great popularity. Its brevity in spite of its comprehensive coverage of the field together with its unique style puts it in a class by itself.

Although the number of pages have remained the same, 6,500 lines have been changed, and they have been woven into the text sometimes in a most unorthodox style. Space-saving abbreviations are used, and many lines drop off abruptly because of addition or deletion of material. This may bother the new reader of the book until he gets the spirit and purpose of the author. The book was not intended to be read consecutively as a text but was offered as a concise reference book for documentation of practical data useful in everyday practice. The book has been well received by the practitioner and student, and its popularity is well merited.

Odors: Physiology and Control. By Carey P. McCord, the Industrial Health Conservancy Laboratories, Detroit, and William N. Witheridge, Ventilation Consultant, General Motors Corporation, Detroit. Cloth. Price, $6.50. Pp. 405, with illustrations. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1949.

This is the first comprehensive book dealing exclusively with odors and their control. The authors have been interested in the subject for many years. They submit a list of information and material well worth the time of health officers, industrial physicians and others interested in these problems. After careful consideration of the anatomy and physiology of the olfactory system, the third chapter presents methods of detection and measurement of odors. Subsequent chapters are concerned with the influence of odors on health and comfort, odors that appear in the human body in relationship to disease and the value of odors for diagnosis. Then come such subjects as industrial odors, offensive trades and methods for destroying or masking odors. Consideration of the legal aspects of the subject and a comprehensive bibliography concludes this useful work.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

UNDIAGNOSED FEVER

To the Editor:—A woman aged 62 has had a temperature of 101 to 102 F. in the afternoon and evening for months. The fall of temperature has been associated with profuse sweating. She has general abdominal pain and much pain and aching of the whole body, constipation, loss of appetite and loss of weight. The patient has had an appendectomy, has borne four children and has had no acute illnesses in recent years. The results of physical examination are generally negative; blood cell counts and results of urinalysis are essentially normal. A roentgenogram of the chest shows no sign of active infection; the sedimentation rate is increased. Results of agglutination tests for typhoid, brucellosis and proteus are negative. The result of a skin test with diluted brucellosis vaccine was negative; however, the patient did have an increased amount of sweating and general malaise following the intradermal injection of vaccine. The results of roentgen studies of the gastrointestinal tract were normal. The gallbladder visualized normally.

M.D., Indiana.

Answer.—In the differential diagnosis of an illness of this nature one should consider not only infectious diseases and localized infections but also the possibility of neoplastic diseases. In the further search for infections, repeated cultures of blood, cultures of urine and feces and the examination of the stools for parasites are indicated. The agglutination tests should be repeated if the original ones were done relatively early in the course of the illness. Agglutination tests for the paratyphoid group, tularense and heterophil antibody should be included. In the interpretation of the repeated Brucella agglutination test, it should be remembered that the reaction to the test may become positive for several weeks or months or even longer after a Brucella skin test. Titers as high as 1:320 may be thus engendered, and in these circumstances should not be considered as evidence of brucellosis. If enlarged peripheral lymph nodes are present, a suitable node should be excised for culture, animal inoculation and histologic study. Pyelograms made by the intravenous method may disclose an infectious or a neoplastic process. Examination of the cerebrospinal fluid may be done if other examinations are not fruitful.

Localized infections may produce sepsis with fever and generalized symptoms while showing little or no localizing symptoms. Perinephritic, subdiaphragmatic and liver abscesses are particularly liable to manifest themselves thus. Osteomyelitis may also at times give little localizing symptoms. Sinusitis likewise may produce fever without local symptoms, but suitable roentgen studies will disclose its presence. Full mouth dental roentgenograms should also be made in a search for apical abscesses. In the search for the cause of fever, one must be careful not to overlook tertiary syphilis, extrapulmonary tuberculosis, cirrhosis of the liver, thrombosis and embolism as possible causes.

In the investigation for possible neoplastic diseases gastrointestinal roentgen studies should be supplemented by proctoscopic examination and tests for occult blood in the stools. There should be no hesitation in repeating the roentgen studies if any doubt exists as to their adequacy and completeness or if enough time has elapsed for the further development of a lesion which may have been previously overlooked. Hypernephroma and lymphomas are particularly prone to cause temperature elevation.

The therapeutic trial of aureomycin or other antibiotics before all diagnostic efforts are exhausted is not to be recommended. Such treatment may mask the disease, interfere with diagnostic procedures and render the eventual diagnosis and the subsequent proper treatment more difficult or even impossible.

RHEUMATIC FEVER

To the Editor:—Can a diagnosis of rheumatic fever be made from any reliable blood test or laboratory findings?

Paul K. Edwards, M.D., Bloomington, Wis.

Answer.—There is no definitive laboratory test for rheumatic fever. Most attacks of rheumatic fever are accompanied by an elevation of the erythrocyte sedimentation rate and an increase in the antistreptolysin O titer of the blood serum. These two blood tests are helpful in the differential diagnosis of rheumatic fever.

TOBACCO AND LONGEVITY

To the Editor:—What effect, if any, has the use of tobacco on (1) glaucoma, (2) the advance of arteriosclerosis and senility, (3) mental deterioration and (4) longevity.

Samuel B. Rentsch, M.D., Derby, Conn.

Answer.—1. No direct effect of tobacco on glaucoma has been demonstrated. The frequency of glaucoma in women and nonsmokers and the lack of aggravation of symptoms on smoking would argue against the incrimination of tobacco in this respect.

2. Persistent effects of tobacco and of tobacco smoke on the blood vessels have been repeatedly reported, on the basis of experimental studies and clinical observations, but these claims have been vigorously controverted. The immediate effects of tobacco and especially of nicotine on the cardiovascular system are pronounced and definite, but there is a conflict of evidence regarding organic effects following prolonged administration. Some writers have suggested that arteriosclerosis may result secondarily from hypertension aggravated by nicotine, rather than from the direct effect of tobacco on the blood vessels. Statistical studies appear to show a slightly higher incidence of arteriosclerotic conditions among smokers than among nonsmokers, but the effects of associated conditions, such as alcoholism and syphilis, among the smokers cannot be readily excluded.

3. General deterioration of intelligence, especially in juveniles, has been repeatedly ascribed to tobacco smoking, and numerous comparisons of scholastic records and results of mental tests of smokers and nonsmokers have been cited to support this idea. Some of this may represent selection, since the inferior student may more often resort to smoking for consolation or in defiance, but the phenomenon has been extensively confirmed both in colleges and in schools. Whether it would be true of older persons is uncertain, as there are little data regarding the older ages—and many physicians act, at least, as if they doubt it.

4. A shorter life span has been repeatedly alleged to occur in tobacco smokers and has been particularly stressed in an extensive study by Pearl. Some of the excess reported may be ascribed to overindulgence in alcohol and other practices associated with the use of tobacco. Some deaths may be accelerated, if not actually caused, by tobacco smoking, as in Burger's disease and cancer of the lip, but these may cause little change in the total longevity of large groups.

References:

Schrumpf-Pierron, P.: Tobacco and Physical Efficiency: A Digest of Clinical Data, New York, Paul B. Hoeber, Inc., 1927.

Bogen, E.: Tobacco, in Fisher, I., and Emerson, H.: How to Live, ed. 20, New York, Funk and Wagnalls Company, 1938, appendix 11, pp. 253-264.

Pearl, R.: Tobacco Smoking and Longevity, Science **87**: 216 (March 4) 1938.

RETROBULBAR NEURITIS

To the Editor:—My daughter, age 28, has had retrobulbar neuritis (right) since about Sept. 1, 1948. It followed acute colon bacillus cystitis which cleared up in a few days. She has a baby 7 months old. Vision in the affected eye is still slowly improving. In *The Journal* (138: 1127 [Dec. 17] 1948) there is an abstract of a report by Cerquetelli and Nobili of good results in multiple sclerosis with intravenous histamine injections. Do you think that these injections would be of value in my daughter's case? Information as to treatment and prognosis would be appreciated.

M.D., Iowa.

Answer.—In the absence of more definite information with regard to the cause of the retrobulbar neuritis, the degree of initial loss of vision, the present status of the central vision and fields of vision and the appearance of the optic disk, it is difficult to evaluate the prognosis in this case. If normal vision is to be regained spontaneously after an episode of acute retrobulbar neuritis, recovery will occur in about six weeks after the onset. In some instances, however, gradual improvement will continue for a much longer time. The lapse of nine months, as in this case, would suggest, usually but not necessarily, that the maximum of improvement had been attained.

Because of the tendency to spontaneous improvement and because successful results have been reported mainly when treatment has been instituted early, opinions differ as to the efficacy of any therapy for retrobulbar neuritis or other episodes in multiple sclerosis. A number of ophthalmologists think that vasodilatation promotes recovery in cases of retrobulbar neuritis and improves the visual end results. In competent hands, the intravenous administration of histamine has seemed to be a safe and satisfactory method of producing vasodilatation in the optic nerve and retina. Since it is impossible to tell, on the basis of elapsed time alone, when actual atrophy of the optic nerve fibers has occurred, it seems justifiable to try a course of intravenous histamine therapy at any stage in the course of retrobulbar neuritis, provided atrophy is not visible ophthalmoscopically in the optic disk.

BLACK TONGUE

To the Editor:—Is there any recent treatment for "lingua villosa nigra?" The patient in question has dissimilar tooth fillings and a vulcanite plate. He had coronary disease a year and a half ago; otherwise he appears to be in good health.

M.D., Massachusetts.

Answer.—There is no new or specific treatment for "lingua villosa nigra," called also black tongue, hairy tongue and lingua filaceosa chromatica. The lesion is a hypertrophic elongation of the filiform papillae, similar to keratosis of the skin. The cause is uncertain, and the various yeasts and fungi which may be found are secondary. The dental condition is probably also unrelated.

The patient should be told that the condition is harmless, that therapy is aimed at clearing away the offending growth and that it may recur. The area may be scraped or brushed every few days; 1 per cent aqueous acriviolet (a mixture of acriflavine and methylrosaniline chloride), methylrosaniline chloride or hydrogen peroxide (3 per cent) may be applied recurrently, and the use of strong sodium chloride solution or sodium perborate (and other boron) mouth washes should be banned, since they are considered by some to be causative.

A new cause for black tongue has been described, "Black Hairy Tongue from Penicillin" (Wolfson, S. A., J. A. M. A. **15:** 1206 [Aug. 13] 1949), with a review of the foreign literature. Since the connection would be obvious from a history, and since the lesion results from local use of the drug, withdrawal should clear the condition.

DEPOSITS ABOUT SHOULDER JOINTS

To the Editor:—I have several patients with calcific deposits in soft tissue about shoulder joints and hypertrophic osteoarthritis of bodies of the cervical part of the spine. The ages of the patients range from 49 to 57 years. No foci of infection have been discovered, and the results of physical examination are otherwise normal. The patients' complaints are pain and slight limitation of motion of the involved regions.

M.D., New York.

Answer.—In the literature on the two subjects, no emphasis has been placed on the coexistence of osteoarthritis of the cervical vertebrae and calcific tendinitis in the shoulder and there is no mention of the shoulder condition's being secondary to the cervical pathologic condition. However, Fletcher points out in the *British Journal of Physical Medicine* (**8**:45-51, 1945) that in osteoarthritis of the cervical part of the spine there is a common pattern of pain radiating over the top of the shoulder down to about the level of the insertion of the deltoid. Meyerding and Ivins present a discussion of the differential diagnosis of the painful stiff shoulder in the *Transactions of the Western Surgical Association* (**55**:155-166, 1947).

The roentgen observations in the cases described are the clues to the underlying pathologic conditions. Since complaint is made of pain and limitation of motion in the "involved regions," both the shoulder and neck should be treated by first heating with infra-red radiation or short wave diathermy for thirty minutes followed by deep sedative type massage to both and then assistive and, finally, active exercises to regain the normal range of motion in each. This routine of treatment can be carried out once or twice daily. After each treatment selected patients should have mild cervical traction with the Sayre sling according to the procedure described by McFarland and Krusen (*Arch. Phys. Therapy* **24**:263-269 [May] 1943).

TRANSFUSION OF LEUKEMIC BLOOD

To the Editor:—Should blood from a person with chronic lymphatic leukemia be used for transfusion? Is there a possibility of transmission of leukemia this way? Has anyone reported treatment of leukemia by transfusion with blood from donors who were first "immunized" with leukemic blood? Would massive transfusions of this "antileukemic" blood with simultaneous removal of blood from the recipient be worth trying if the assumption that an antileukemic factor can be produced in donors is correct?

G. D. Gregory, M.D., Chicago Heights, Ill.

Answer.—There are several reports relative to the transfusion of leukemic blood. In each instance there was no evidence of transmission of leukemia. Thiersch in over 50 cases did not observe the development of leukemia in human subjects after subcutaneous injection of leukemic blood, lymph node or splenic tissue. It has been possible to transmit leukemia as well as certain cancers in an experimental animal such as the mouse only if the animal is of selected, inbred strain.

There is no evidence that any anti-human-leukemia factor has been produced by immunization technics, as far as known.

Bessis treated 38 patients with acute leukemia by massive blood replacement transfusions and obtained improvement in 30. He believes this to be caused by an antileukemic factor present in normal blood. However, this work needs further corroboration. Dr. N. Rosenthal has tried this replacement transfusion technic on a large number of patients with acute leukemia, and he finds a lack of evidence that the course of the disease is significantly influenced.

TEST FOR PHEOCHROMOCYTOMA

To the Editor:—A married woman aged 52 complains of paroxysms of rapid and irregular heart beating with elevated blood pressure and dyspnea. Between the attacks her blood pressure subsides to 160 systolic and 90 diastolic. During and after the attacks her pressure ranges from 190 systolic and 100 diastolic to 200 systolic and 110 diastolic. The attacks come at irregular intervals of about one week. One of them occurred one hour after she took her first and only dose of priscoline® (2-benzyl-4,5-imidazoline hydrochloride), 25 mg. orally. It was the severest up to the present time and occurred on the evening of one of her best days. The electrocardiographic tracing shows left axis deviation with moderate myocardial degeneration. Retrograde pyelograms show grade 1 hydronephrosis of the right kidney. The right kidney is rotated. When the patient is placed in the erect position, neither kidney descends more than a few centimeters. No soft tissue mass is made out at the kidney area. Is there any test short of exploration by which pheochromocytoma may be excluded as a cause of her attacks of paroxysmal tachycardia.

Paul R. Farrington, M.D., Boulder, Colo.

Answer.—It does not seem likely from the history given that the patient referred to has pheochromocytoma. As a rule the increase in blood pressure paroxysmally is greater than that recorded here and not necessarily dependent on arrhythmia, i the rapid irregular heart beating was auricular fibrillatio There can be a pressor effect from paroxysmal tachycard itself, and, since there was slight hypertension to start with, th patient would likely be more prone to such hyperreaction. I is true that with pheochromocytoma there tends to be tachy cardia as well as increased blood pressure, but that is sinoauricular and not paroxysmal and often there are other symptoms, too, such as increased perspiration.

The recent introduction of piperidylmethyl benzodioxane (933F), which specifically reduces the blood pressure in cases of pheochromocytoma, has been found reliable and preferable to the test with histamine; it may be used helpfully in the patient referred to, to exclude pheochromocytoma. The article by Goldenberg, Snyder and Aranow refers to this test (J. A. M. A. **135**:971-976 [Dec. 13] 1947).

SUNBURN

To the Editor:—After viewing the amount of sunburned skin during a visit to a beach, my curiosity was aroused as to the possible after-effects of sunburn and prolonged deep tanning. Have any studies been made regarding possible renal damage as a result of such exposures? I heard a dermatologist express concern about the possible effect of such tanning on women's skin in connection with the later appearance of epitheliomas. Are there any data about sunburn or tanning as an etiologic factor in epitheliomas?

M.D., Washington, D. C.

Answer.—Renal damage per se does not occur from exposure to sunlight, although it may occur as part of the syndrome of heatstroke.

Practically all textbooks mention exposure to strong sunlight as one of the factors that may lead to the development of skin cancers. Such lesions are much more prevalent in sunny countries, on sun-exposed areas of the face and in those engaged in outdoor occupations. Sunlight, however, does not usually constitute a hazard to the person who courts the sun at intervals only, such as on weekends and during vacation periods during the summer months. There have been many studies made of the effect of sunlight on the skin. References to them are given in most full textbooks on dermatology.

HYPOCHLOREMIA

To the Editor:—In the May 14 issue of THE JOURNAL, in the Queries and Minor Notes, there is a reply to a letter on the subject of hypochloremia. It seems to me incomplete, as it fails to recognize that the patient described had been on a salt-poor diet previous to the paracentesis in which 2,000 cc. of the fluid was removed and the wound allowed to drain. My associates and I have observed the syndrome described in just these circumstances and have found a decrease of the blood chlorides. The relief obtained from relatively small amounts of isotonic sodium chloride solution given intravenously is dramatic. The explanation seems to be that when there is prolonged use of a salt-poor diet the electrolyte reserves of the body are depleted and cannot stand the additional loss entailed by the removal of ascitic fluid. The same syndrome has been produced experimentally in patients by continued removal of gastric juice and subsequent hypochloremia (Kirsner, J. B.; Palmer, W. L., and Knowlton, K.: Studies on Experimental and Clinical Hypochloremia in Man, J. Clin. Investigation **22:** 95, 1943).

Walter L. Palmer, M.D., Professor of Medicine, University of Chicago.

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REPRODUCTION IN THE OLDER WOMAN

Chairman's Address

L. A. CALKINS, M.D., Ph.D.
Kansas City Kan.

Medical history records many myths and superstitions surrounding the practice of obstetrics. Each of the past several generations felt that it had made great progress, and we are now advised that "modern" obstetrics is far ahead of the practice of former years. This is no doubt true; yet, there remain many fads and fancies, changing a bit from time to time but still not too far removed from some of the myths and superstitions of bygone times.

A careful search of the literature reveals that many of our accepted facts of today are based on the study of an extremely small number of patients. The late Dr. William E. Caldwell made the observation that the long-accepted normal measurements of the female pelvis were based on the measurements of only 50 women. The work of Caldwell and of others, in recent years, has given us the information that the female pelvis is considerably smaller than was formerly believed. Similarly, one can begin the study of almost any so-called clinical fact and, without too prolonged an investigation, find that the accepted belief is at least in part false. Dr. E. D. Plass, a number of years ago, made what is to me the most significant statement I have ever heard when he said, "I doubt everything in medicine." This statement is unique in that it represents the sweeping conclusions of a thoroughly trained mind and an experienced investigator. It is also outstanding in that it shows the errors in our medical knowledge and the great need for improvement therein.

A great part of the reason for the continuance of mistaken beliefs is the attitude of the medical student and the practicing physician that whatever appears in a textbook is to be accepted as fact. Were we to analyze the problem confronting the writer of a textbook, we should at once realize that such a book is to a great extent merely a copy of previous books. If this fact were generally recognized, such books would be read with more discrimination and we should have a much healthier viewpoint and approach to medical knowledge.

The "old primipara" was said many years ago to offer a hazard with respect to herself and to the baby. This idea has been and still is being repeated in textbooks. Each of us will have at least an occasional patient in this category who does have difficult labor, hypertensive cardiovascular disease or toxemia or who even has a seriously malformed child. As a result, each of us is apt to approach our next elderly primigravid woman with some degree of fear and trembling. If the labor is not consummated in an extremely short time by spontaneous delivery, we are impelled, by our fear of a possible adverse outcome, to undertake some form of operative delivery which in itself often carries more risk than the average moderately serious complication in younger women. It would be difficult to find a clinic anywhere in the country where the incidence of cesarean section is not much greater for the older primiparas than it is for the younger ones.

Data in any given series of "old primiparas," cared for in these circumstances by physicians who possess these fears, will naturally not compare favorably with the results in a series of younger women who are allowed to deliver spontaneously or with only minor interference. In the analysis of any such series, one should distinguish between the differences inherent in the patients and those induced by altered management.

There have appeared in the literature few analyses of the outcome of pregnancy and labor for elderly multigravidas. A few writers have treated the subject of the "grand multipara," but, since many multiparas are still rather young, the effect of aging on the multipara has not been accurately assessed. If the elderly multipara presents a problem, that fact is not generally recognized.

The present study includes the analysis of 5,186 consecutive cases in primiparas and 4,681 consecutive cases in multiparas. All the women, with few exceptions, were delivered under my direction. It should be said at this point that, while I have not feared the problem of the elderly primipara as much as many physicians, I have, of course, not been entirely immune to the belief that she is more likely to have trouble than her younger counterpart. The patients, both primiparas and multiparas, were divided into four age groups. In the case of the primiparas, the age groups were (1) up to 15, (2) 16 to 29, (3) 30 to 34 and (4) 35 and older. The age groups for the multiparas were (1) up to 29, (2) 30 to 34, (3) 35 to 39 and (4) 40 and older. The data for the primiparas and the multiparas have been analyzed to determine differences in the incidence of major

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From the University of Kansas Medical Center.

Read before the Section on Obstetrics and Gynecology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

complications and of abnormal presentations, the duration of the first and second stages of labor, the loss of blood in the third stage of labor, the number of cesarean sections and other operative procedures performed, the weight of the baby and the fetal mortality.

Tables 1 and 2 show that the incidence of some of the major complications was definitely increased in the older age groups, whereas aging seemed not to produce significant increases for other complications. For correct interpretation of these figures one must take into account the fact that a number of patients with complications are referred to a clinic such as that from which these figures come and that, therefore, the incidence of these complications in this series was much greater than one would observe in the strictly private practice of an individual physician or among the "booked" cases of a clinic. It is rather striking that hypertensive cardiovascular disease was greatly increased for both primiparas and multiparas in the older age groups in this series. Similarly, serious myomas of the uterus were a negligible complication in the younger women, whereas these tumors appeared frequently in the older groups. These and other diseases characteristic of the upper brackets of so-called middle life perforce have an increased incidence in the older groups and, of course, affect the outcome of the pregnancy and the labor in some cases. It is somewhat surprising that the incidence of late toxemia of pregnancy was no greater for the older primipara than for her younger sister.

TABLE 1.—*Primigravidas with Major Complications*

	Age, Years							
	Under 16		16-29		30-34		35 and Over	
	No.	%	No.	%	No.	%	No.	%
Condition								
Late toxemias	13	7.6	282	6.0	26	9.5	7	5.9
Myoma	0	0	5	0.1	7	2.5	13	11.0
Placenta previa	1	0.6	20	0.4	4	1.4	1	0.9
Premature separation	0	0	23	0.5	2	0.7	0	0
Heart disease	0	0	16	0.3	2	0.7	4	3.4
Other conditions	0	0	16	0.3	5	1.5	2	1.7
Total patients with major complications	14	8.2	362	7.8	46	16.7	27	22.9
Total patients	170		4,623		275		118	

TABLE 2.—*Multigravidas with Major Complications*

	Age, Years							
	Under 30		30-34		35-39		40 and Over	
	No.	%	No	%	No.	%	No.	%
Condition								
Toxemia	61	1.9	35	4.1	56	11.1	13	7.2
Placenta previa	38	1.2	17	1.9	13	2.6	8	4.4
Premature separation	25	0.8	9	1.5	11	2.2	5	2.7
Cardiovascular disease	25	0.8	7	0.8	17	3.4	9	5.0
Myoma	7	0.2	7	0.8	7	1.4	2	1.1
Other conditions	21	0.7	10	1.2	3*	0.6	0	0
Total patients with major complications	177	5.6	85	10.0	107	21.0	37	20.4
Total patients	3,142		854		504		181	

* Two of these patients had carcinoma.

Abnormal presentation (tables 3 and 4), if one includes breech presentation, was moderately increased for the older multiparas and greatly increased for the older primiparas. This did not seriously affect the outcome

TABLE 3.—*Primigravidas Showing Abnormal Presentation*

	Age, Years			
	Under 15	16-29	30-34	35 and Over
Breech presentation	3	182	12	11
Other types				
Bregma	3	34	3	2
Brow	..	9	3	..
Face	..	8	1	..
Transverse	1	4	2	1
Total patients showing abnormal presentation	7 (4.1%)	237 (5.1%)	21 (7.6%)	14 (11.9%)
Total patients	170	4,623	275	118

TABLE 4.—*Multigravidas Showing Abnormal Presentation*

	Age, Years							
	Under 30		30-34		35-39		40 and Over	
	No.	%	No.	%	No.	%	No.	%
Breech presentation	103	3.3	35	4.1	26	5.1	8	4.4
Other types								
Bregma	25	...	2	...	1	...	1	...
Brow	9	...	5	...	2	...	..	...
Face	9	...	..	...	..	...	1	...
Transverse	15	0.5	13	1.5	6	1.2	5	2.8
Compound	1	...	..	...	..	...	..	...
Total patients showing abnormal presentation	162	5.1	55	6.4	35	6.9	15	8.3
Total patients	3,142		854		504		181	

TABLE 5.—*Incidence of Cesarean Section and Duration of First Stage of Labor for Primigravidas*

	Age, Years			
	Under 16	16-29	30-34	35 and Over
Patients with cesarean section	2 (1.2%)	65 (1.3%)	23* (8.7%)	11† (9.3%)
Patients with normal first stage of labor	167	4,520	251	107
Aver. duration, hr	13.5	13.2	14.7	12.9
Total patients for whom data were compiled	170	4,623	275	118

* Fourteen of these patients had dystocia; 2, placenta previa; 2, heart disease; 2, toxemia; 2, myoma, and 1, diabetes.

† Four of these patients had dystocia; 1, placenta previa; 2, toxemia; 7, myoma, and 1, diabetes.

TABLE 6.—*Incidence of Cesarean Section and Duration of First Stage of Labor for Multigravidas*

	Age, Years			
	Under 30	30-34	35-39	40 and Over
Patients with cesarean section	68 (2.2%)	31 (3.6%)	27 (5.4%)	9 (5.0%)
Repeated	21	13	6	1
Due to placenta previa	7	5	3	2
Due to cardiovascular disease	..	..	2	3
Average duration of first stage of labor, hours	7.8	7.6	8.2	7.6
Total patients	3,142	854	504	181

for either mother or child and was, therefore, of more scientific than practical interest. It is, in fact, difficult to see how age per se could affect the type of presentation, and it seems doubtful to me whether a similar series would show a difference of this type.

Tables 5 and 6 have to do with the incidence of cesarean section and the duration of the first stage of labor for patients delivered through the vagina. The incidence of cesarean section for the older patients in both series was definitely greater. For the primiparas, in particular, this increase was due in no small part to the increased incidence of heart disease and fibroids; likewise, for the multiparas, heart disease played a large role. Another considerable number of the cesarean sections, which can definitely be ascribed to the fear that something might go wrong in the labor of the elderly primiparas, were, in my present opinion, unnecessary. In the case of the vast majority of the patients who were delivered through the vagina, the first stage of labor was no longer for the older patients of either group.

TABLE 7.—*Data on Second and Third Stages of Labor for Primigravidas*

	Age, Years			
	Under 16	16-29	30-34	35 and Over
Second stage				
Patients with spontaneous delivery.....	150	3,891	173	67
Average duration, min.	56	51	53	51
Patients with operative delivery	15 (9% of 170)	552 (12% of 4,623)	79 (31% of 275)	40 (37% of 118)
High forceps...........	..	1	..	..
Mid forceps............	3	34	6	6
Low forceps...........	11	496	67	33
Version	1	21	5	1
Craniotomy	..	5	1	1
Average duration, min.	136	107	75	96
Blood loss in third stage, cc.				
Spontaneous delivery..	177	186	200	210
Operative delivery.....	267	284	296	356
Total patients for whom data were compiled	170	4,623	275	118

In tables 7 and 8, the second stage of labor may also be seen to have been no longer in the older age groups. One might well remark that if a woman is young enough to become pregnant, she is young enough to have her baby. In the cases in which it was thought necessary to undertake operative delivery, the decision was arrived at sooner, on the average, for the older age groups and might have been avoided in many instances if the patients had been given the same opportunity for spontaneous delivery as their younger sisters. While the amount of blood lost in the third stage was slightly greater for the older age groups in this series, the difference was not large and was in no way comparable to the increased loss associated with operative delivery, particularly when that operative delivery was undertaken early in the second stage, necessitating a more extensive procedure.

TABLE 8.—*Data on Second and Third Stages of Labor for Multigravidas*

	Age, Years			
Second stage	Under 30	30-34	35-39	40 and Over
Patient with spontaneous delivery	2,904	752	435	157
Average duration, min........	16	15	19	18
Patients with operative delivery	58 (1.9%)	34 (4.1%)	18 (3.8%)	8 (4.7%)
High forceps..................	2	..	..	..
Mid forceps....................	9	5	2	..
Low forceps....................	31	13	8	3
Version	15	16	7	5
Craniotomy	1	..	1	.
Average duration, min........	16	15	19	18
Blood loss in third stage, cc....	159	173	191	176
Total patients for whom data were compiled................	3,142	854	504	181

TABLE 9.—*Data on Weight of Baby and Fetal Mortality for Primigravidas*

	Age, Years			
	Under 16	16-29	30-34	35 and Over
Average weight of baby, Gm.........	3,005	3,153	3,168	3,149
Instances of fetal mortality				
Antepartum..........................	2	38	7	3
Intrapartum..........................	3	40*	5	2
Neonatal..............................	0	60	5	5
Total instances of fetal mortality...	5 (2.9%)	138 (3.0%)	17* (6.2%)	10† (8.5%)
Total patients.........................	170	4,623	275	118

* In 1 case, placenta previa was the cause of death; in 4, trauma; in 4, toxemia; in 1, diabetes, and in 3, premature birth; in 4 cases, the cause was unknown.

† In 1 case, anencephaly was the cause of death; in 1, hydrocephaly; in 1, syphilis; in 2, toxemia; in 2, myoma, and in 2, premature birth; in 1 case, the cause of death was unknown.

TABLE 10.—*Data on Weight of Baby and Fetal Mortality for Multigravidas*

	Age, Years			
	Under 30	30-34	35-39	40 and Over
Average weight of baby, Gm.........	3,265	3,285	3,270	3,285
Instances of fetal mortality				
Antepartum..........................	29 (0.9%)	12 (1.4%)	23 (4.6%)	9 (5.0%)
Intrapartum..........................	17	12	12	4
Neonatal..............................	53	22	14	7
Total instances of fetal mortality...	99 (3.2%)	46 (5.4%)	49 (9.7%)	20 (11.0%)
Total patients.........................	3,142	854	504	181

The weight of the baby (tables 9 and 10) was not appreciably increased for the older women and, therefore, was not a factor of clinical importance. The fetal mortality (tables 9 and 10) was definitely higher for the older women; this was particularly true of the neonatal mortality for the primiparas and of both the antepartum and the neonatal mortality for the multiparas. When the 2 examples of major developmental anomalies which happened to occur in this relatively small number of cases are excepted, the increased mortality appears largely due to increased operative interference, to the presence of fibroids and, although it is not indicated in these tables, to the increased incidence of heart disease. Cesarean section is to be preferred to major vaginal operative procedures, particularly for dystocia due to unyielding soft parts. It is extremely difficult to arrive at a correct early decision in some of these cases.

SUMMARY AND CONCLUSIONS

The data for this relatively small series of patients demonstrate that older pregnant women, like other women of the same age but not pregnant, are more apt to have fibroids, hypertensive cardiovascular disease and, perhaps, carcinoma (indicated in the original data but not shown in the tables) than are younger women. They are, therefore, deserving of the most careful and complete examination of all their organs and functions. The analysis also seemed to show that labor and the results thereof, except for a possible extremely moderate increase in fetal mortality, can be expected to progress along the same lines as for the younger groups. Our present fear of the outcome of pregnancy for the elderly primigravida is no more justified than would be such a fear for the elderly multigravida. A small number of the older primiparas will be found to have serious complications, but so will a similar number of the older multiparas. Careful examination and accurate diagnosis are therefore necessary. If no major complications are present, one can approach the care of the older patient, primigravida or multigravida, with the same confidence one has in that of a younger patient.

ANESTHESIA FOR THE PARAPLEGIC PATIENT

COMDR. JAMES G. KURFEES
LIEUT. SCOTT WHITEHOUSE
and
LIEUT. FRANK CERZOSIMO
Medical Corps, United States Navy

During World War I approximately 80 per cent of the men who received injuries of the spinal cord died within the first few weeks as a result of urinary infections and decubitus ulcers.[1] Today through more effective means of counteracting shock, rapid evacuation of the wounded and the almost miraculous effects of the sulfonamide drugs and antibiotics, large numbers of patients who sustained injuries of the spinal cord are living and are being rehabilitated for a useful life in their community.

MATERIAL

Since January 1945 we have had the opportunity to observe a series of 49 cases in which injuries of the spinal cord resulted in either complete or partial paralysis of the lower extremities with varying degrees of dysfunction of bladder and bowel.

The cervical region was involved in 14 cases, the thoracic in 30 and the lumbar in 5 (table 1). The total number of surgical operations performed in these 49 cases was one hundred and sixty-seven, as classified in table 2. Of these operations, twenty-five did not require anesthesia of the patient because the operative site was well below the level of the lesion.

PREOPERATIVE PREPARATION

The paraplegic patient presents many problems to the physician, but two are of the utmost importance to the anesthesiologist: First, many paraplegic persons are in a state of malnutrition with low hemoglobin and plasma protein levels. Patients with plasma proteins below 6 to 8 Gm. per hundred cubic centimeters or hemoglobin below 80 per cent had transfusions of whole blood. Unless positive nitrogen balance is maintained, wound healing is retarded and resistance to infection is decreased. Second, after the occurrence of an injury to the spinal cord there is an immediate change in the state of a person from independence to almost complete dependence on others for transportation, nourishment and disposal of excreta. Depression even with thought of suicide is not uncommon. Because of his physical dependence on others, the paraplegic person becomes less mature emotionally as shown by irritability, fits of anger and depression.

Since these patients show pronounced emotional instability, it is of the utmost importance that the anesthetist gain their confidence. This is accomplished during preoperative rounds, when the purpose and methods of the anesthesia are discussed with the patient and an attempt is made to evaluate his emotional status.

The paraplegic patient in our experience has a low threshold for pain, and, because many of them have received analgesics for considerable periods of time, larger doses of depressant drugs are required for premedication.

CHOICE OF ANESTHESIA

A review of the current literature revealed little information regarding the choice of anesthetic agent for the paraplegic patient. Donald Munro of Boston City Hospital has expressed his preference for intravenous thiopental sodium (pentothal sodium®) on a tribromoethanol (avertin®) base as an anesthetic.[2] Croce and Beakes [3] reported on the operative treatment of decubitus ulcers in 130 paraplegic patients treated at the Halloran General Hospital. Most patients did not require an anesthetic at the time of operation, since the ulcer occurred below the sensory level. When anesthesia was required, endotracheal administration of ether was used almost exclusively, because it was considered safest with the patient in the prone position. Spinal anesthesia was seldom employed.

In our series of cases we have given the patients ether and thiopental sodium in varied technics as shown in table 2. Endotracheal administration was the method used, whenever indicated (as in the sitting, prone or lateral position), to insure a patent airway. Several of the patients were in cervical traction, and in these intubation was done with topical cocainization before general anesthesia was induced.

It is our belief that in qualified hands any agent can be administered to paraplegic persons with any suitable technic if such fundamental physiologic and pharmacologic principles as adequate fluid therapy, oxygenation and maintenance of blood pressure are observed.

Our consultants, Drs. Lewis H. Wright, Emanuel Feldman and Norman L. Cook, assisted in the preparation of this article.

Read before the Section on Anesthesiology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

[1] Kennedy, R. H.: The New Viewpoint Toward Spinal Cord Injuries, Ann. Surg. **124:** 1057-1065, 1946.

[2] Munro, D.: The Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paralysis, New England J. Med. **233:** 453-461, 1945.

[3] Croce and Beakes: Operative Treatment of Decubitus Ulcer, New England J. Med. **237:** 141-149, 1947.

MANAGEMENT DURING OPERATIVE INTERVENTION

The problem of adequate respiratory exchange and the position required during surgical intervention concerns the anesthesiologist more in the paraplegic patient than in many other types of patients. In injuries of the thoracic and cervical parts of the spine, paralysis of the intercostal muscles places the full burden of respiratory exchange on the diaphragm. Often hemopneumothorax is a complication of thoracic spine and rib injuries, and its displacement of available pulmonary area also reduces respiratory exchange. Changes in position in such cases may cause mediastinal shifts with all the attendant reflex physiologic emergencies.

Increase in abdominal pressure in the paraplegic patient can encroach on what little efficiency there remains in diaphragmatic breathing and thereby increase any degree of anoxia that may already exist.

With this problem in mind one must protect the respiratory efforts that are present and assist them as needed. In prone positions the patient is supported by rolled sheets extending bilaterally from the clavicle to the anterosuperior part of the spine. This permits minimal interference with respiratory exchange. In sitting positions for cervical laminectomies, careful positioning is important to obviate any interference with diaphragmatic activity. Well padded arm supports are used to maintain this position and to prevent any weight bearing by muscles of the shoulder girdle.

TABLE 1.—*Statistical Summary of Injuries to the Spinal Cord*

Site of Lesion	
Cervical (C 5 to C 7)	14
Upper thoracic (T 1 to T 6)	13
Lower thoracic (T 7 to L 1)	17
Lumbar (L 1 to L 5)	5
Total	49
Etiology of Injury	
Shell fragments	7
Bullets	10
Fracture of the vertebra	30
Rupture of the anterior spinal artery	2
Total	49

The presence in the paraplegic patient of an abnormal cutaneous vascular reflex renders the skin over weight-bearing bony points, especially over the sacrum, ischia and trochanters, particularly susceptible to pressure ischemia and necrosis. Experience has shown that continued weight bearing cannot be extended beyond two hours at a time without risk of producing pressure necrosis, which inevitably leads to ulcers with all the attendant difficulties of hypoproteinemia, infection, toxicity and anemia.[4] Special attention must be given by the anesthetist to the paraplegic patient to insure careful padding and positioning of the weight-bearing bony points.

Because of the high incidence of renal calculi, fluid replacement during surgical procedures should be adequate to maintain renal function and prevent stasis. The position of paraplegic persons who have indwelling catheters connected to rubber bladder bags strapped to an extremity must be arranged so that no pressure or weight will be applied to that bag, since back pressure will distend the patient's bladder, resulting in postoperative discomfort for several hours.

TABLE 2.—*Type of Anesthesia in 167 Operations on Paraplegic Patients*

		Type of Anesthesia					
				Thiopental Sodium			
Type of Operation	No. of Cases	Ether Endotracheal Absorption	Ether Absorption	Plus N_2O and O_2	Drip	Plus O_2	None
Laminectomies							
Cervical	9	9	..	..	..	..	..
Thoracic	33	28	3	2	..	..	..
Lumbar	2	1	..	1	..	..	..
Genitourinary							
Suprapubic cystotomy	14	..	..	12	..	2	..
Nephrostomy	6	5	1	..	..	..	..
Nephrectomy	3	3	..	..	..	..	..
Pyelotomy	3	2	1	..	..	..	..
Pyelolithotomy	1	1	..	..	..	..	..
Litholapaxy	1	..	..	1	..	..	..
Ureterotomy	4	1	..	3	..	..	..
Periurethral abscess *	3	..	..	3	..	..	..
Cystoscopy	8	..	..	7	..	1	..
Abdominal							
Exploratory Laparotomy	2	..	2	..	..	..	..
Jejunostomy	1	..	1	..	..	..	..
Colostomy	4	..	..	3	1	..	..
Resection of the terminal ileum	1	..	1	..	..	..	..
Neural							
Median nerve repair	1	..	..	1	..	..	..
Ulnar nerve repair	1	..	..	1	..	..	..
Neurolysis of right brachial plexus	1	..	..	1	..	..	..
Obturator nerve crush	2	..	..	2	..	..	..
Spinal Fusions							
Cervical	1	1	..	..	..	..	..
Thoracic	2	2	..	..	..	..	..
Plastic repair of decubitus ulcers	29	1	..	..	5	..	23
Rhizotomy	7	5	..	2	..	..	..
Cordotomy	3	..	..	3	..	..	..
Amputation at midthigh	3	..	..	2	1	..	..
Sequestrectomy of ischium	14	..	..	5	6	1	2
Lengthening of wrist tendons	1	..	..	1	..	..	..
Osteotomy of dorsal spines	1	1	..	..	..	..	..
Change of dressing	2	..	..	..	..	2	..
Sinus exploration of abdomen and back	2	..	..	2	..	..	..
Bilateral mastectomy	1	..	1	..	..	..	..
Lung abscess *	1	1	..	..	..	..	..
Total	167	61	10	52	13	6	25

* Incision and drainage.

In regard to blood pressure, pulse and respiratory patterns of paraplegic patients, our series did not reveal any unusual features.

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POSTOPERATIVE MANAGEMENT

The paraplegic patient with cervical or thoracic involvement has an impairment of respiratory exchange and an inability to cough forcibly With this in mind it must be made certain postoperatively that careful and thorough tracheobronchial aspiration is performed and adequate pulmonary exchange is present in both lung fields. Ward personnel who are well trained in postoperative care pertaining to preservation of the airway, adequate aspirations, adjustment of position and recognition of impending shock during the recovery period must be available.

COMPLICATIONS

Anesthetic Complications.—Other than 1 case of atelectasis in which the patient made an uneventful recovery, there were no anesthetic complications.

Operative Complications.—There was 1 case of meningismus subsequent to a thoracic laminectomy. During a nephrolithotomy the diaphragm was inadvertently injured, resulting in pneumothorax. In 1 patient there developed postoperative surgical shock.

SUMMARY AND CONCLUSION

A study is presented of problems of anesthesia in one hundred and sixty-seven surgical operations performed on 49 paraplegic patients.

The particular problems of management presented by the paraplegic patient preoperatively, during surgical intervention and postoperatively are discussed.

It is concluded from our clinical observations that paraplegic patients present no insurmountable problems in anesthesia, provided the usual basic fundamental principles of anesthesia are observed, namely, adequate oxygenation, sufficient fluid replacement therapy and maintenance of circulation.

ABSTRACT OF DISCUSSION

Dr. Lewis H. Wright, Great Neck, N. Y.: The authors have emphasized the main problems involved in the care of these patients—psychologic, nutritional and peculiar reactions to painful stimuli. Now that the physician is more familiar with the care of paraplegic persons their life expectancy is greatly increased and several thousands of them are leading more or less normal lives. Paraplegic patients present frequent surgical problems. They are especially prone to the development of urinary calculi; therefore they repeatedly need relief of pain. Every anesthesiologist should be familiar with the particular problems involved in anesthesia for these patients. This paper stresses the importance of obeying the fundamental psychologic, physiologic and pharmacologic principles of surgery and anesthesia. This can be repeated again and again. Each patient must be thoroughly studied, and the anesthetic procedure that best fits his particular needs must be adopted. The nutritional needs of the patient must be considered from the point of view not only of the surgical procedure but of the variable effects of anesthetic drugs on patients in a state of malnutrition; for example, anesthetic drugs affect patients with hypoproteinemia more adversely than they do normal patients. In these patients I have used: ether; cyclopropane; nitrous oxide, thiopental sodium and oxygen; nitrous oxide and thiopental sodium; oxygen and curare combinations; spinal anesthesia, and, of course, local anesthesia, with appropriate technic. In any given case, any agent or technic properly chosen may be used satisfactorily, with the results one would expect provided the fundamental principles of anesthesia are obeyed. One cannot repeat too often that the user, not the procedure, is more vital.

Dr. Dwight D. Grove, Philadelphia: The following general principles should be applied to the anesthetic management of the paraplegic subject. 1. Preoperative preparation should be as thorough and complete as possible. The physical status of the patient should be improved to the best degree attainable before surgical treatment is instituted. Comprehensive laboratory, roentgen ray, clinical and physical observations should be used as a guide for preparation of the paraplegic patient for surgical intervention. 2. The choice of anesthetics should be confined to those agents and technics with which the anesthesiologist is thoroughly familiar. New agents and technic should not be tried on these handicapped and subnormal risk patients. 3. The anesthetic agent and method should be selected only after careful consideration of all factors involved. Agents and methods available are varied and numerous, an indication that no one ideal method has been developed. From these should be selected the agent and method most suitable for a particular patient, the surgeon and the anesthesiologist assigned to the case. 4. Every attempt should be made to prevent complications before, during and after surgical intervention. Frequent change of position, breathing exercises, maintenance of muscle tone, tracheobronchial aspiration by catheter or bronchoscope and the use of antibiotics come under this general principle. 5. Because of the psyche, I believe that these patients should have general anesthesia to prevent any further possible psychic trauma. It is advisable, where possible, to produce unconsciousness with rectal or intravenous agents before the patients are removed from their beds and taken to the surgical amphitheater. The choice of anesthesia for the paraplegic patient will usually be found among the following agents and methods: 1. Intravenous thiopental sodium supplemented with nitrous oxide and oxygen for surgical procedures in the supine position which do not require relaxation. 2. Endotracheal ether and oxygen for intra-abdominal surgical measures, operations on the head and neck, intrathoracic procedures, and surgical treatment with the patient in the lateral and prone position. Cyclopropane and oxygen, with or without the addition of ether, is an equally good choice if contraindications to cyclopropane do not exist before or during anesthesia. Small amounts of thiopental sodium may be used for the induction of anesthesia. 3. Tribromoethanol solution, rectally, supplemented with endotracheal nitrous oxide and oxygen where the use of electrical equipment precludes the use of a flammable anesthetic. However, nitrous oxide, chloroform, spinal and regional anesthesia and the use of curare do not hold desirable positions in the problem of the selection of anesthesia for the paraplegic patient.

The Transport Surgeon.—This is one of the most responsible assignments given to any Army medical officer of comparable age, rank and experience. As the only physician on a floating Army post, often 1,000 miles from the nearest land, he must assume responsibility for the sanitation of the ship and render emergency veterinary, dental and medical service. The passengers and crew may include 2,000 persons. In addition, he commands a staff of about 15 persons, including nurses, enlisted technicians and, occasionally, WAC personnel. He is commander of a 50 bed hospital, which includes about 15 cribs. This hospital is administratively considered to be a station hospital, and the transport surgeon must maintain all the usual records required for such an installation. He must act as his own medical supply officer and medical administrative officer. He also performs a staff function for the transport commander and acts as an accredited representative of the Public Health Service, Quarantine Section. In compensation for this tremendous work load, the facilities at the transport surgeon's disposal are a medical man's dream. About seven tons of medical supplies encompassing 900 items are placed aboard each vessel, including a 30 ma. portable radiographic unit with full darkroom facilities, modern operating room equipment and a complete medical library.—Captain Thomas G. Kantor, Medical Corps, Army of the United States, Army Transport Medical Service, *Bulletin of the U. S. Army Medical Department,* October 1949.

PREOPERATIVE AND POSTOPERATIVE CARE

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To prepare a healthy patient for operation and to guide him through a speedy and successful convalescence is usually not difficult. However, when disease has caused important abnormal physiologic changes and when the necessary operative procedures are long and traumatic, the difference between a successful outcome and a failure will lie in the skill with which the patient is supervised before, during and after operation. The human body has remarkable powers of adaptation when all its systems are functioning, and it has rich reserves with which to compensate for deficiencies produced by disease and treatment. Many mistakes made in the past were those of well intentioned but unreasoned therapy such as enforced bed rest, excessive drugging and overzealous parenteral feeding.

EVALUATION OF THE PATIENT

The preoperative preparation of the patient begins at the moment of the initial examination. It consists of an accurate evaluation of the physical and mental status and the initiation of a plan for correction of existent pathologic conditions.

Most significant organic abnormalities will be brought to light during the course of a preliminary study of the patient consisting of a careful history, physical examination and the necessary laboratory studies.

Age no longer has an important influence on the decision of a physician to carry out definitive surgical measures. Both the extremely young and the extremely old tolerate major operative procedures well if adequately prepared and understandingly managed. The cardiovascular status must be carefully evaluated, but the presence of organic heart disease, except in the patient with severe hypertension, should not deter physicians from proceeding with necessary operative procedures. Similarly, other chronic organic diseases need not constitute a contraindication to surgical measures if their presence is known. The patient with poor renal function may pose special problems in water and electrolyte balance, but if albuminuria, a persistently low specific gravity of the urine or an increase in the amount of nonprotein nitrogen is noted preoperatively, these problems may be anticipated and more easily solved.

NUTRITIONAL PREPARATION

The nutritional status of the patient who is chronically ill has been the subject of careful study. The importance of various nutritional deficiencies has been emphasized, but it is well to keep in mind that in the malnutrition of chronic illness the body suffers from a deficiency of all food elements. History and evidences of recent involuntary loss of weight are the best clinical manifestations of a deficiency in the diet. Plasma protein determinations may in certain instances be of aid, but they do not always reflect the true nutritional state of the patient.

The potential deleterious effects of malnutrition on surgical convalescence are many. The dangers of hypoproteinemia have been emphasized, but it is well to remember that this is only one manifestation of generalized malnutrition. These dangers include a lag in wound healing and increased incidence of wound dehiscence,[1] a predisposition to the development of decubitus ulcers[2] and increased susceptibility to shock.[3] Delay in gastric emptying time[4] and retarded intestinal motility[5] develop. Increased susceptibility to infectious diseases results because of a deficient production of antibodies.[6]

The nutritional preparation of the patient is best carried out by the normal oral route whenever possible, utilizing diets sufficient in all food elements. This frequently taxes the ingenuity of both the physician and the dietitian. In a difficult feeding problem the daily intake, especially the protein and caloric components, should not be left to chance but should be accurately determined and recorded. Protein hydrolysates are easily assimilated by the patient who is chronically ill, and when necessary they may be advantageously used to supplement normal diets. Varco[7] has recently provided an excellent summary of preoperative dietary management in the chronically ill patient and has suggested helpful methods for use in difficult feeding problems.

Patients with a high degree of esophageal or pyloric obstruction cannot be adequately prepared nutritionally by the oral route. The results of feedings by gastrostomy have been disappointing. Feedings by jejunostomy have had limited usefulness, largely because most of the formulas previously employed have caused severe diarrhea. The use of homogenized milk formulas may help to overcome this difficulty.[8]

Elman[9] first demonstrated in 1939 that treatment with parenterally administered protein can be successful in man. Since that time, this method of administering protein to the ill patient has enjoyed an everwidening popularity. In our experience parenterally administered protein has an extremely limited field of usefulness, but it is helpful in the preparation of those severely malnourished patients who cannot take adequate diets in other ways. Kremen[10] has recently shown that malnourished patients who are poor operative risks can be adequately prepared for operations of major magnitude by parenteral means alone if 3,000 cc. protein hydrolysate (amigen®) and 500 cc. whole blood are given daily.

Whipple[11] demonstrated that much of the protein given to the chronically ill, anemic patient is diverted to hemoglobin production. If protein supplies are limited, hematopoiesis enjoys top priority and may draw on other tissues to meet its protein requirements.

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Read in the General Scientific Meeting at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 7, 1949.

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The rational preoperative program must include transfusions of whole blood first and adequate protein and caloric intake later, whether it be by the preferable oral route or of necessity by other routes.

Certain of the vitamins are of importance in the preoperative preparation of the surgical patient. Ascorbic acid (vitamin C) is essential in the healing of wounds and should be supplied in amounts as high as 1 Gm. daily. Several of the B complex vitamins, notably thiamine hydrochloride (10 mg. daily), riboflavin (2 mg.) and nicotinic acid (50 mg. daily) aid in the metabolism of carbohydrates. The utilization of parenterally administered dextrose especially demands these vitamins. Riboflavin also aids in the utilization of certain of the amino acids.[12]

Vitamin K, a precursor of prothrombin, is urgently required by patients with hepatic insufficiency or lesions of the gastrointestinal tract producing obstructive jaundice, diarrhea or persistent vomiting. The prothrombin *concentrations of all patients with significant gastro*intestinal lesions requiring surgical intervention should be determined preoperatively. Severe operative hemorrhage may result if an existent prothrombin deficiency is not corrected. Hypoprothrombinemia caused by the inhibition of bacteria which normally synthesize vitamin K within the gastrointestinal tract has also been noted in patients receiving orally administered phthalylsulfathiazole (sulfathalidine®)[13] or streptomycin.[14] Patients receiving intestinal antiseptics should be given supplementary amounts of vitamin K.

The more nearly a normal diet can be approximated, the better will be the response. This should be the guiding rule in all preoperative nutritional therapy.

CORRECTION OF ANEMIA AND DECREASED VOLUME OF BLOOD

The anemic patient has long been known to tolerate surgical intervention poorly. A normal hemoglobin level is essential for maintenance of adequate oxygenation during anesthesia and after operation. Elective operative measures should never be undertaken until the anemia of the patient has been corrected.

Clark and his co-workers[15] have introduced the concept of chronic shock to explain the poor tolerance of chronically ill patients to operative procedures. The essential elements of this syndrome are loss of weight, decreased volume of blood, decrease of proteins in the blood and an increased volume of interstitial fluid. The entire picture, including the decreased volume of blood, is a result of starvation and is postulated as being due primarily to a deficiency of circulatory red blood cell mass and hemoglobin without consistent depletion of the tissue protein reservoirs. In the absence of bleeding correction of this deficit is quantitative, based on the patient's usual or ideal weight prior to illness. Repeated transfusions restore the blood volume to normal without producing significant hemoconcentration and increase the tolerance of the patient who is a poor risk for major surgical procedures.

Although certain aspects of this concept have not been universally accepted, it has been recognized that chronically ill patients do tolerate operative intervention better after they have received multiple transfusions of blood.

CORRECTION OF DEHYDRATION AND CHEMICAL IMBALANCE

Dehydration may be caused by simple limitation of fluid intake, especially in the patient who is chronically ill, by abnormal losses from the gastrointestinal tract or elsewhere or by various combinations of both. Compensatory shifts in the extracellular fluid develop, and disturbances in electrolyte balance result. Diagnosis is made predominately on the basis of the clinical picture.[16] In dehydration due to abnormal losses of both sodium chloride and water this consists of apathy, weakness, somnolence, anorexia, brief periods of nausea, reduced affective responses, transient vertigo, a soft pulse and a slightly sticky skin. If the dehydration is severer, unproductive retching, syncope on attempting to stand, lowered blood pressure, tachycardia, subnormal temperature and soft eyeballs may be manifested.

Laboratory aids, including plasma chloride determination, are not always accurate in determining the extent and severity of dehydration. It has been noted, however, that clinical signs of dehydration are not usually manifested until a fluid loss comparable to 6 per cent of the body weight has been reached, and this may be of aid in determining the initial volume of fluid necessary to correct dehydration.[17]

Dehydration is frequently accompanied by disturbances of acid-base equilibrium. The amount and character of abnormal losses determine whether acidosis or alkalosis develops.

Treatment of dehydration consists of the administration of appropriate volumes of Ringer's solution and/or 5 per cent dextrose in water. Sodium chloride solutions alone correct the simple alkalosis of pyloric obstruction. Treatment of acidosis may necessitate the utilization of solutions of sodium lactate as well or, in the presence of hepatic insufficiency, of sodium bicarbonate. Dosages must be judged by clinical response; fixed formulas have proved inaccurate.[18] The daily total volume and specific gravity of the urine best reflect the water needs. In the presence of normal renal funtion and adequate urinary output (1,000 to 1,500 cc.), the determination of urinary chlorides provides an index of further sodium chloride requirements.[19] These chemical abnormalities require immediate correction, which should be accomplished before operative treatment is undertaken.

PREPARATION OF THE GASTROINTESTINAL TRACT

Proper preparation of the bowel is one of the most important adjuncts to successful gastrointestinal surgery. A few days spent in assuring optimum preparation is more than compensated by the smooth convalescence which it assures.

Intestinal obstruction, when it exists, is perhaps the greatest difficulty to be overcome, and the principles of decompression should be thoroughly understood and applied. No definitive operation should be carried out by election until decompression has been effected.

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In general, pyloric obstructions and obstructions of the upper part of the small intestine are best managed by gastroduodenal (Wangensteen) suction. The Miller-Abbott tube, or its modifications, has its greatest application in the management of obstructions of the small intestine without vascular embarrassment. It does not provide adequate decompression for the obstructed colon, nor have we found it necessary as a supplementary measure in resections of the nonobstructed colon.

To proceed with definitive resection of the colon in the face of obstruction is a certain invitation to disaster. A decompressive cecostomy relieves the distention and edema of the bowel sufficiently to permit the reestablishment of bowel movements and adequate preparation. In those few patients who have virtually complete obstruction of the descending colon a proximal colostomy, preferably in the transverse colon, may be necessary. This must be performed as an emergency procedure in the event of perforation of the colon with spreading peritonitis and is an urgent necessity when there is a severe inflammatory process secondary to a slow perforation of a neoplasm or diverticulum. Satisfactory diversion of the fecal stream in these instances is necessary and is not afforded by cecostomy. After an appropriate period of adjustment the definitive surgical procedure can be safely performed.

Parenterally administered fluids and antibiotics are supplementary adjuncts of proved value and should be utilized in the management of intestinal obstruction.

The intestinal antiseptics, succinylsulfathiazole, phthalylsulfathiazole and more recently phthalylsulfacetimide (thalamyd), are a definite aid in the preparation of the colon. The position of orally administered streptomycin, although it is effective in reducing the bacterial flora within the colon, is at present debatable.[20] If the drug is used it should not be administered for longer than forty-eight to seventy-two hours preoperatively, as it rapidly loses its efficiency after this period of time.

We have discontinued the routine use of saline cathartics and enemas in the preparation of patients for surgical intervention, those with colonic lesions included. These measures are usually unnecessary and often add to the discomfort, dehydration and electrolytic disturbances of the patient. Succinylsulfathiazole and to a lesser extent phthalylsulfathiazole have a mild cathartic action and in most instances will induce several soft stools a day, which is adequate. Occasionally, a patient may be persistently constipated and may require mild saline catharsis during the last day or two of preparation.

AMBULATION AND MENTAL PREPARATION

In addition to these specific preoperative measures there are others of a more general nature which are of equal value. Ambulation is as important preoperatively as it is postoperatively. Every patient should be encouraged to continue his normal way of life to the time of operation.

The psychiatric components of such organic diseases as chronic ulcerative colitis and peptic ulcer have been thoroughly investigated. Competent psychiatric consultation is of great help in managing patients with these diseases Many physicians tend to lose sight, however, of the great complexity of emotions with which the average patient approaches a surgical procedure, no matter how trivial. A few moments devoted to a sympathetic discussion of the patient's disease, the anesthetic, operation, anticipated postoperative course and cost will help him approach the operation much better prepared emotionally. The beneficial results may not be measurable objectively, but they are nevertheless real and important.

OPERATIVE PERIOD

In any discussion of preoperative and postoperative care certain aspects of the operative period itself cannot be completely ignored. Aside from the purely technical features of the operation, many important adjuncts to successful postoperative care may be established at this time. Not the least important of these is the choice and administration of anesthetic agents, which is discussed elsewhere.

Replacement of Blood Loss and Parenteral Administration of Fluids.—The replacement of blood simultaneously with its loss during an operation is of considerable importance. Unless measured objectively, blood loss is in most instances of greater magnitude than estimated. There are no laboratory tests suitable for routine clinical use in the postoperative patient which give an accurate estimate of the volume of blood lost during operation. Ideally, it is best calculated directly by gravimetric or colorimetric methods. As this is not often practicable, tables have been prepared of the approximate average loss of blood in various operations.[21] This will vary considerably among surgeons and among patients, but every surgeon should be familiar with the approximate loss of blood of his own patients in those operations which he performs frequently. The blood lost should then be replaced in accordance with the demands of each individual case. Replacement of blood has the twofold advantage for the patient of averting serious shock during operative intervention and of aiding convalescence.

It has been demonstrated experimentally that blood transfusions given several hours prior to sublethal hemorrhage in normal animals do little to protect the animal from the effects of hemorrhage.[22] It is thus evident that the blood volume cannot effectively be raised above normal levels preoperatively as prophylaxis against subsequent hemorrhage and that blood is most effectively replaced at the time of its loss.

Fluids should be administered carefully by the parenteral route during the course of the operation. In the operative and immediate postoperative periods there is suppression of renal function, with retention of sodium in the extracellular compartment. Excess amounts of sodium chloride and water given at this time promote the development of edema. Water is best supplied in a 5 per cent solution of dextrose, and volumes greater than 1,000 cc. are seldom necessary. Sodium chloride solutions should not be given.

Surgical Technic.—Careful technic, gentle handling of tissues, painstaking hemostasis, sharp anatomic dissection and accurate reconstruction contribute immeasurably to postoperative comfort of the patient and ease of convalescence. Within reasonable limits operative time is of secondary importance to operative care. Although a high premium is often placed on speed in an effort to utilize fully limited operating time and space, minutes saved in the operating room may well prolong the patient's convalescence by days. There should be no question as to which is economically sounder.

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POSTOPERATIVE CARE

Postoperative care begins the moment the last suture is placed in the wound and ends when the patient returns to a normal mode of life. It consists primarily of those measures which will aid the patient in an early return to his normal physiologic status and which will aid the surgeon in the anticipation, prevention and treatment of postoperative complications. No facet of surgical practice requires more diligence, attention to detail, accuracy of observation and promptness of action once a trend is manifested, and there are no results more gratifying.

Ambulation.—Early ambulation has had an important influence on surgical convalescence. Although initially advocated by Ries[23] in 1899 and practiced extensively in Europe in the late twenties, it did not gain widespread recognition in this country until Leithauser and Bergo[24] renewed interest in it in 1941. Since that time many observations have supported its beneficial effects.

Simple confinement to bed has been shown to induce a negative nitrogen balance and to have a deleterious effect on the appetite. Conversely, early ambulation has a distinct protein-sparing action and reduces the severity and duration of postoperative asthenia. The vital capacity of the lungs returns to normal more rapidly and the tensile strength of wounds is not impaired.

Clinically, the incidence of postoperative complications, especially pulmonary, is reduced after early rising. Less nursing care is necessary, and patients do not require as much sedation. Most important, both the physical and emotional convalescence are appreciably shortened, and a shorter stay in the hospital is necessary.

Our experience with early ambulation has been completely favorable, and undue complications have not resulted. Patients are urged to get out of bed within twenty-four hours after operation and are aided in walking about the room. They are made to walk at least twice daily after that and are permitted complete freedom of ambulation as soon as it is tolerated. The only real contraindications to early ambulation are severe illness and confining apparatus. If patients are able to walk before operation, they are able to walk after it.

Fluid Requirements: Blood.—Water and electrolyte requirements in the immediate postoperative period are minimal. Renal function is usually extremely depressed during the first 12 to 48 hours after a serious operation; the selective excretion of electrolytes is temporarily disturbed, and sodium chloride and water are retained within the extracellular spaces.[25] During this period low urinary output is the rule, the extent of oliguria being in direct proportion to the severity of the operative measure and not related to the volume of fluid administered. Administration of sodium chloride at this time is unnecessary and only places a harmful burden on the depressed kidneys. On the day of operation intravenously given fluids should be limited to blood in sufficient quantity to replace that lost and a volume of 5 per cent dextrose in water sufficient to replace insensible water loss (approximately 1,500 cc.).[26]

Fluid and electrolyte requirements during the remainder of convalescence are dependent on the patient's progress and are determined only after careful clinical appraisal. In general, sufficient water should be administered to replace the insensible loss and to adequately support renal function. In the presence of normal renal function the specific gravity and volume of the urine is the best index of water need. In temperate climates 2,000 cc. daily will usually satisfy basal metabolic requirements, but this is varied in accordance with the patient's clinical appearance and the urinary observations. The oral route should be utilized as early as possible, but if parenterally administered fluids are required, 5 per cent dextrose in water is the solution of choice.

Electrolyte requirements are variable and are directly dependent on the extent of abnormal losses. The body has adequate reserves of sodium chloride, and in the presence of normal renal function these reserves are jealously protected by the kidneys. Electrolytes should be replaced only as lost and on a volume for volume basis, utilizing hypotonic sodium chloride solution, thereby combating the water and electrolyte deficits simultaneously. Sodium chloride should not be given routinely in the immediate (forty-eight hour) postoperative period, and the value of supplying a daily maintenance dose throughout the remainder of convalescence is questioned. In the event of large abnormal losses of fluid from the gastrointestinal tract, the potential disturbances of the acid-base relationship must be anticipated and combated. If clinical evidence of deficits of sodium chloride and water develops, the condition should be treated intensively, even at the risk of precipitating edema. If renal function is normal and the urinary output is more than 1,000 cc. daily, determination of urinary chlorides (Fantus test[27]) is of aid in determining sodium chloride needs from day to day.

If anemia has been corrected preoperatively and blood loss replaced simultaneously during operation, postoperative transfusions of blood are given only as the need arises. Such need may be anticipated in severe sepsis, intestinal obstruction and secondary hemorrhage or when large weeping wounds are present.

Nutrition.—It is our belief that the important goal in postoperative nutrition is the return of the patient to the oral intake of whole natural foods as rapidly as possible. The only contraindication to the offering of solid foods by mouth is the inability of the patient to retain them because of vomiting, paralytic ileus or intestinal obstruction. Gastrointestinal anastomoses are not considered contraindications to oral feeding. Patients who have undergone operations such as colonic resections with primary anastomoses are given solid foods as rapidly as they are tolerated, usually by the second or third postoperative day. We do not subscribe to the indiscriminate administration of protein hydrolysates or amino acids in the immediate postoperative period but reserve their use for the occasional patient who is deprived of the oral or gastrojejunal route of feeding for a prolonged period.

There is rather widespread concern at present over the negative nitrogen balance usually encountered in the immediate postoperative period. Proteins are frequently administered parenterally in an effort to overcome this. Cuthbertson and associates [28] first called attention to the definite increase in the excretion of urinary nitrogen following trauma, and this phenomenon has been related to the general adaptation syndrome of Selye.[29] This catabolic effect in protein metabolism is sometimes ascribed to a cannibalistic effort on the part of the body to mobilize essential amino acids from the protein reserves to aid in repairing the tissue at the site of injury. There is no evidence, however, that the administration of essential amino acids at this stage will prevent protein catabolism.

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Although parenterally administered proteins are capable of maintaining a positive nitrogen balance later in the postoperative period, whole proteins given orally are more efficiently utilized than the protein hydrolysates administered either orally or intravenously.[30] Koop and associates [31] found the intravenous administration of protein to be extravagant and wasteful in that almost twice as much protein nitrogen is required to maintain a positive nitrogen balance when administered parenterally as when given orally. A 30 per cent higher caloric intake is also required before a positive nitrogen balance is obtained.

Ravdin [32] has drawn attention to the fact that too much emphasis is being placed on the clinical value of maintaining a positive nitrogen balance as determined by laboratory criteria. In the present state of knowledge of protein metabolism one cannot be certain that the retained nitrogen is utilized to restore depleted tissue and plasma proteins or that maintaining a positive nitrogen balance is of primary importance. A patient never dies as a result of a few days of negative nitrogen balance, which is fortunate, because there seems to be no way of obviating this condition after severe trauma.

Carbohydrates are necessary for their caloric value and for their protein-sparing effect. It is impossible to supply sufficient carbohydrates by the intravenous route to satisfy caloric requirements without seriously overhydrating the patient. It has been demonstrated, however, that 100 Gm. of dextrose, the amount contained in the 2,000 cc. of 5 per cent dextrose solution found necessary to satisfy the daily water requirements, is sufficient to prevent significant diversion of proteins to meet energy requirements. The caloric requirements must be met as rapidly as possible by oral feedings of carbohydrate and fat.

Vitamin requirements during this period are the same as during the preoperative preparation. They may be given parenterally in dextrose solutions but not with protein hydrolysates.

Measures Commonly Misused in Postoperative Care.—Physiologic disturbances of the gastrointestinal tract, both functional and organic, are frequent after operative procedures and may be the chief source of discomfort for the patient. The introduction of constant gastroduodenal suction has been a great aid in managing this problem. It relieves vomiting and discomfort during transient disturbances of gastrointestinal motility and is a surgical necessity in organic obstruction or generalized peritonitis.

However, this valuable adjunct is frequently misused. Its routine use after every abdominal operation, including cholecystectomy and intestinal anastamosis, is unnecessary and may be actually detrimental in that it is uncomfortable and discourages mobilization. If gastric distention or vomiting develop, suction should be instituted immediately and employed intermittently or continuously until motility returns. This is seldom necessary. Only after gastric surgery is suction routinely employed and then it is maintained for only twenty-four to forty-eight hours.

The Miller-Abbott tube is invaluable in the management of prolonged ileus or mechanical obstructions incident to difficult abdominal operations. By its judicious use secondary laparotomy may be averted or greatly simplified. We have not found use of the Miller-Abbott tube necessary after intestinal anastamosis in order to protect the suture line. Neither do we consider that such stimulants as neostigmine methylsulfate or beta-hypophamine (pitressin®) have a place in the management of postoperative distention.

Sedatives, particularly the morphine derivatives and barbiturates, are often given without justification. When properly utilized, these are extremely helpful drugs. When used unnecessarily, the return of normal physiologic processes may be unnecessarily retarded. All too often they are given in the absence of specific indications.

Cathartics and enemas are universally grossly misused. This is doubly true during surgical convalescence. Food is the natural stimulus for peristalsis and defecation. If appetizing meals rather than potent cathartics are served during the postoperaitve period, peristalsis will be promptly resumed in a normal rhythm. Normal bowel habits will return relatively early, provided they are not discouraged by prolonged bed rest and use of the bed pan. Routine postoperative enemas and cathartics are unnecessary and should be deprecated.

Management of Complications.—The prevention, prompt detection and treatment of complications demand constant attention during the early postoperative period. This necessitates careful evaluation of the patient's every complaint and prompt investigation of significant fluctuations of temperature, pulse and respiratory rate. The more frequent and important complications will be briefly discussed.

Pulmonary Complications.—Most cases of postoperative or hypostatic pneumonia are secondary to atelectasis. Every case of pneumonitis of this type discernible by roentgen examination must be regarded as evidence of a lapse in postoperative care. Atelectasis is preventable if a stringent program for keeping the tracheobronchial tree free of secretions during the early postoperative period is followed. Effective measures for attaining this include enforced cough and hyperventilation, intermittent tracheal suction and resort to bronchoscopy if more conservative measures fail. The antibiotics are wholly ineffective in preventing this complication, and their routine use as prophylaxis totally ignores the pathogenesis of the lesion.

Atelectasis should always be suspected in event of a sharp rise in temperature in the first forty-eight hours after operation. Diagnosis is readily made by physical signs. Although roentgen examination is a helpful adjunct, valuable time may be lost by relying on it completely for diagnosis. Once the diagnosis is

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established, effective treatment requires that the tracheobronchial tree be cleared of obstruction and kept clear. Antibiotic therapy is warranted at this time to aid in the control of secondary pneumonitis.

Thromboembolism.—Thromboembolism is a distressing complication, from the standpoint of both immediate mortality and prolonged morbidity. It has stimulated much investigation in recent years, and divergent methods of control have been evolved. Although we still do not have the final answer as regards optimal management of this condition, a large cumulative clinical experience is now available and certain generalizations are permissible.

The early detection of phlebothrombosis is the greatest single aid in reducing the incidence of pulmonary embolism. This requires constant vigilance on the part of the surgeon, as the patient's subjective symptoms are minimal. The veins of the leg are most commonly involved, and, fortunately, definite clinical signs are present and can be easily elicited if sought. The diagnosis should be suspected whenever there is a simultaneous rise in temperature, pulse and respiratory rate (Allen's sign). The legs should be examined routinely once or twice daily for evidence of edema, tenderness of the calf, pain on dorsiflexion of the ankle (Homan's sign) or distention of the superficial veins of the leg. Daily measurements of the calf and thigh are obligatory.

Once the diagnosis has been made, prompt treatment is mandatory. The choice between the use of anticoagulant therapy (heparin sodium and/or dicumarol®) and ligation of the deep veins of the leg or vena cava is frequently difficult. Each has its enthusiastic advocates; specific indications are at present not absolute. A choice must depend somewhat on the surgeon's own personal experience with the alternative methods, the availability of the laboratory facilities necessary for the control of anticoagulant therapy, the relative expense of the methods and the condition of the patient. We favor the use of anticoagulants except in patients with advanced degenerative disease, those in whom a bleeding hazard exists or those in whom repeated or septic emboli develop while they are receiving anticoagulant therapy. Blocking of the sympathetic nerves is an important measure when evidence of vasospasm is present.

Sepsis.—Infections of the urinary tract and sepsis of the wound are frequent causes for fever during surgical convalescence. Pelvic and subphrenic abscesses may develop insidiously. Frequent rectal examinations and repeated fluoroscopic visualization of diaphragmatic movements are of paramount importance in the detection of the cause for sepsis. Such infections are readily controlled by appropriate surgical drainage and antibiotic therapy.

Renal Insufficiency.—Until recently the development of pronounced oliguria or anuria following severe trauma, shock or reaction to transfusion was almost always fatal. Various forms of treatment have been utilized in the past, including decapsulation of the kidneys, peritoneal irrigation, gastrointestinal lavage and splanchnic blocks, but none has been uniformly effective. Recently a plan of treatment has been evolved which is effective in maintaining life until healing of the renal lesions occurs.[33] Essentially this plan entails the careful limitation of fluid intake during the period of renal insufficiency to that volume just sufficient to replace the insensible loss. The administration of excessive fluid at this time does not stimulate increased urinary output; the excess fluid is retained and ultimately kills the patient.

As renal function returns, large volumes of urine with a high sodium chloride content are excreted. Death may result from dehydration and sodium chloride depletion during this phase. All water and salt losses must therefore be accurately and promptly replaced during these few days of diuresis. Following this, return of normal renal function may be anticipated.

SUMMARY

One may generalize by saying that if one will restore the patient to as near normal as possible before operation, maintain him thus during and after operation, not complicating his progress by needless treatment but unceasingly watching him for complications, there is an excellent chance that every one needing operative treatment may be carried through a successful convalescence.

1313 East Ann Street.

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ADAPTATION OF SUPPORTIVE TREATMENT TO NEEDS OF THE SURGICAL PATIENT

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Boston

The nature of the treatment which surgeons must employ in support of the convalescent patient is determined by the body's own compensation to injury. This compensation, in turn, is conditioned by the physicochemical system which comprises the living organism, and by those neuroendocrine adjustments which are called into play in emergency situations.[1] These adjustments, such as sympathoadrenal discharge, glycogenolysis, lympholysis, vasoconstriction and adrenocortical response, are complex glandular and visceral interactions, the result of epochs of vertebrate evolution, and they enable the human being to survive remarkably extensive trauma. The purpose of the surgeon should be to evaluate these conditions which the body is creating for itself before he imposes new conditions or injects substances intended to promote convalescence. It is my purpose herein to outline some of the important phenomena concerned in the physicochemical system of the organism and in the adjustment to trauma, and to review briefly those steps which the surgeon may take to assist the organism in its return to normal conditions. Acknowledgment is made of the work of many others, both in the laboratories with which I am associated and elsewhere, for the data on which these concepts are based.

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From the Departments of Surgery of the Harvard Medical School and the Surgical Services at the Peter Bent Brigham Hospital and the Massachusetts General Hospital.

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Because of lack of space, this article is abbreviated in THE JOURNAL by omission of a portion of the text, footnotes, tables and illustrations. *The complete article appears in the author's reprints.*

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THE WATER-SOLUBLE AREA

The working tissues of the body are energy-exchanging muscles and viscera. This body engine is characterized by the presence throughout of water in which is dissolved or suspended the substances involved in oxidation-reduction reactions. Within this lean body mass are several sets of membranes across which water, electrolytes, crystalloids, colloids and cells may pass at varying rates, rates which are characteristic for each membrane and for each solute concerned. The rates at which these transfers take place determine the rate at which the body can respond to injury by transfer of substances from one area to another. This energy-exchanging portion of the human body is relatively constant in composition [2] and ceases to exchange energy efficiently if the composition is altered; it is therefore most vulnerable to failure of homeostasis. Its maintenance and support is the objective of therapy. This portion of the body consists anatomically of striated muscle, heart, lungs, liver, viscera and the vascular tree.

This water-soluble area of the body is held up and moved about by strong supporting or covering structures (bone, fascia, tendon and skin) which differ widely in composition and in whose matrix there is generally much less water and a much larger fraction of extracellular solids such as collagen, elastin and calcified matrix. These structures are much less sensitive to acute metabolic derangement and do not enter as prominently into an analysis of the needs of the body in injury and depletion. These supporting and covering structures comprise about 40 per cent of body weight, the lean body mass about 60 per cent.[3]

Until recent years, there has been relatively little knowledge of the rates at which water and solutes move about within the water-soluble portion of the body. Although one might inject large amounts of water and salts into this area to study the changes produced, the injection itself might alter the very relationships one wished to observe. With the advent of the tracer technic—using radioactive or stable isotopes of the common elements—the rate at which substances move about in this water phase may be intensively studied.[4] Such studies consist, in essence, of injecting the tracer substance into the body and noting the rate at which it disappears from the extracellular phase and the rate at which it appears in some other phase of body water, either interstitial or cellular fluid.

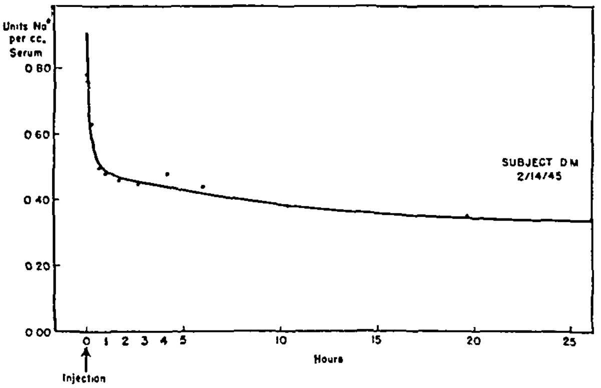

Fig. 2.—Disappearance curve for radioactive sodium in the human subject.[46] Equilibrium of distribution in extracellular fluid is obtained in fifty to sixty minutes, an index of the permeability of the capillary to sodium. · The slow drop to twenty to twenty-four hours probably indicates permeation and exchange of sodium into cells and bone.

Since water itself is the universal solvent, the rate at which the water molecule moves about is of great interest and of considerable relevance in assessing the rate of internal compensation to external injuries. The equilibrium curve for a tracer dose of water (as heavy water) is shown in figure 1. It is apparent that rapid diffusion throughout body water takes place, indicating great permeability of all the membranes of the body to this substance and indicating further the efficiency of circulatory exchange from the capillary bed. It should be pointed out that this equilibrium curve for water involves passage across both the fast membrane (the capillary) and the slow membrane (the cell membrane). From this curve, calculations have been carried out indicating that approximately 73 per cent of blood water passes through the capillary wall every minute.[5] The extreme rapidity with which metabolic changes in the water-soluble area may be communicated throughout the body is apparent.

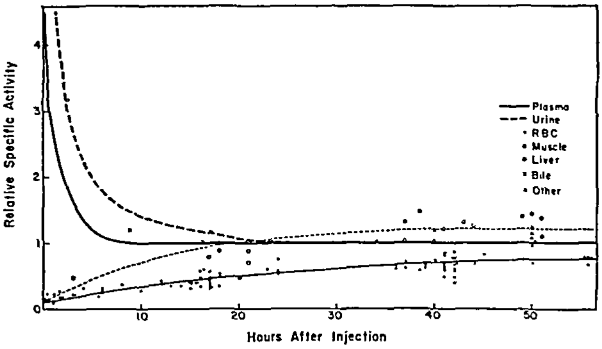

Fig. 4.—Equilibrium curve for radioactive potassium in the human subject. Distributional dilutions involve both intracellular and extracellular phases; approximate equilibrium is obtained in about fifteen hours. The extent of dilution of radioactive potassium in stable potassium, indicated by the specific activity (as shown along the ordinates), is the basis of the measure of total exchangeable potassium (table 3). The red blood cell exchanges potassium more slowly than other tissues, possibly because it is not nucleated and is not involved in active exchange of energy. Tissues studied in these patients, in addition to liver, were normal stomach, muscle, colon and gastric carcinoma. The light solid line is drawn freehand through the average red cell values; the light dotted line similarly through the tissue points.

Although atomic exchange of water hydrogen occurs with great rapidity, mass shifts of water in response to dehydration or rehydration take place at a somewhat slower rate, because the water moves only as fast as its electrolytes will permit it to move. Otherwise, it is moving up an osmotic gradient, a procedure which requires metabolic work for its accomplishment. For these reasons, it is of interest to examine the rates of equilibrium of ions in this water-soluble system. In figure 2 is shown the equilibrium curve for the sodium ion. A rapid mixing and diffusion phase ceases as equilibrium is reached across the capillary, an event requiring approximately sixty minutes. There is then a much slower phase of equilibrium, generally interpreted as the movement of sodium into cells and bone followed by dilution and excretion.[6] Since water can cross the capillary as fast as extracellular ions, this places the capillary as a fast membrane, across which massive transfers may occur with rapidity. Curves for chloride and bromide are obtainable which demonstrate the same order of magnitude of transfer rate of anions across the capillary. A curve for bromide ion constructed between plasma and lymph demonstrated [7] that essentially complete transfer had taken place at the end of twenty minutes (fig. 3).

The equilibrium curve for an intracellular ion, potassium, displays an entirely different character, as shown in figure 4. There is no discernible break at the capillary, but instead a steadily descending curve indicates equilibrium throughout most of the body tissues in twelve to twenty hours. This is the equilibrium curve of an ion whose predominant position is intracellular; the curve is the resultant of forces acting across the cell membrane rather than across the capillary, although the capillary must be crossed in transit.

Moving up the scale of particle size from ions to crystalloids, one finds rates of exchange which are characteristic for each molecular configuration, shape, size and net charge if any. Recent evidence indicates, for instance, that a relatively large crystalloid, antipyrine, conducts itself with almost the speed and solubility characteristic of water.[8] Dextrose, urea and sulfanilamide also show rapid rates of penetration into cells.[9] Since the total osmotic pressure exerted by extracellular crystalloids is inconsequential, these permeability rates are of little importance in water transfer within the organism. Only when concentrations are appreciably elevated, as in hyperglycemia or during infusion of dextrose,[10] do crystalloid concentrations begin to acquire significance with relation to water transfer.

Shifting up another big step in the scale, one comes to the smallest of the circulating solute proteins, albumin. There is now a wealth of evidence that, far from being confined to the plasma, almost half the albumin is outside of the blood stream in interstitial spaces, especially in lungs, liver [11] and visceral lymph where the capillary appears to be almost as permeable to albumin as it is to electrolytes. In figure 5 is shown an albumin permeation curve into lymph. Since a colloid can exert colloidal osmotic pressure only when facing a membrane impermeable to it, it is clear that the colloid osmotic pressure exerted by albumin is of much greater significance for plasma volume maintenance in the periphery, where the capillary is impermeable to albumin,[12] than in the central viscera, where permeability to albumin is pronounced.

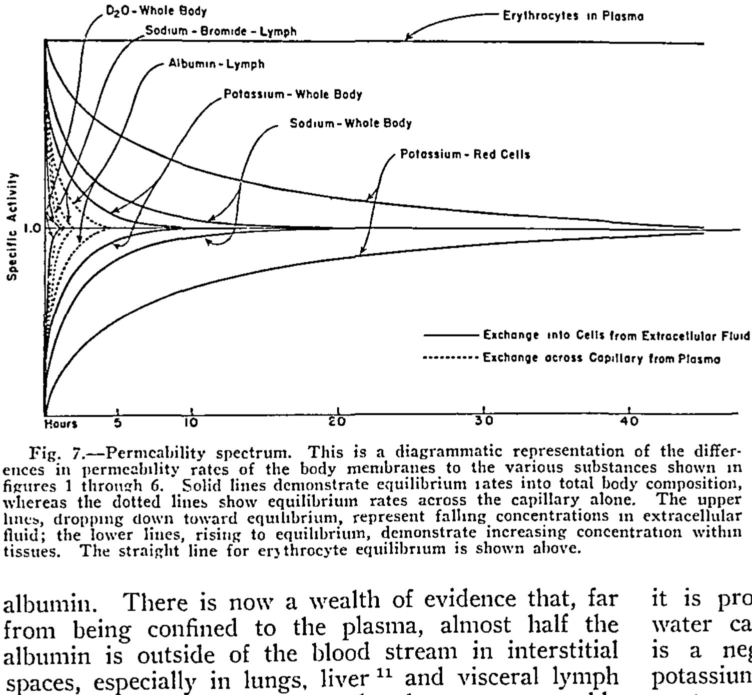

Fig. 7.—Permeability spectrum. This is a diagrammatic representation of the differences in permeability rates of the body membranes to the various substances shown in figures 1 through 6. Solid lines demonstrate equilibrium rates into total body composition, whereas the dotted lines show equilibrium rates across the capillary alone. The upper lines, dropping down toward equilibrium, represent falling concentrations in extracellular fluid; the lower lines, rising to equilibrium, demonstrate increasing concentration within tissues. The straight line for erythrocyte equilibrium is shown above.

For the large proteins, globulin and fibrinogen, toward the top of the particle-size scale, there are few data on permeability rates save those which suggest that these large molecules do not penetrate membranes with ease.[13] Their high molecular weight and relatively low concentration render them of little colloid osmotic significance in the periphery. In visceral areas, where capillaries are more freely permeable to albumin, these large solute proteins may acquire relatively more oncotic effect than they do in the periphery.

Moving up the particle-size scale from the large proteins to the red blood cell is the biggest jump of all. The red blood cell is suspended rather than dissolved in body fluid, and its particle size is of great importance. It is a billion times as heavy and six hundred times as long as albumin.[14] Therefore it has a space-occupying function unique among the substances circulating in the body. The equilibrium curve for the red blood cell is perfectly flat once mixing has occurred (fig. 6). Placed in the normal plasma volume, the red cell cannot escape into any other compartment of body water and its contribution to the maintenance of intravascular mass is therefore far greater than that of any other constituent of the blood.

RATES OF WATER DEPLETION

Varying rates of external loss impose varying problems in internal adjustment. The simplest examples of water loss may be considered as falling into three categories of graded velocity: the slowest is that of gradual dehydration in a thirsting subject, the next in rapidity is water and salt loss over a shorter period of time, as in intestinal obstruction, and the most rapid is external hemorrhage. These will be considered in order (table 1, fig. 8).

The slow rate of water loss involved in dehydration from water deprivation alone occurs in such a fashion that water transfer across both the fast and slow membranes can keep up with the externally imposed conditions. The water loss is approximately prorated through the plasma, extracellular fluid and cell water. Negative balances of sodium are followed later by loss of potassium and nitrogen approximately equivalent to body composition, although nitrogen loss may lag slightly behind potassium loss.[17]

Next in rapidity in the series of phenomena—much oftener observed in surgical cases—is a predominantly extracellular loss occurring over the course of two to seven days, as in pyloric obstruction or high intestinal obstruction. Here the loss takes place at a rate which calls on compensation largely across the fast membrane (capillary) because it is proceeding at a rate more rapid than cellular water can be collected in replacement. The result is a negative sodium balance which far outstrips potassium and nitrogen losses [18] and which may go on to a fatal outcome with high hematocrit and low plasma volume, indicating that the loss is outstripping compensation even across the fast membrane. The loss of potassium in such cases is of importance, and it almost always exceeds the loss of nitrogen (suggesting that the cell mass is capable of some dehydration and loss of electrolytes before its protoplasmic structure breaks down); yet the potassium loss is quantitatively small as compared to the loss of sodium.

The fastest water depletion is the loss of unchanged blood as external hemorrhage. No hematocrit change results until compensation across the fast membrane (capillary) takes place, bringing back into the blood stream a cell-free and relatively protein-free fluid, restoring the plasma volume toward normal but (through dilution of red blood corpuscles and protein) diminishing oxygen transport and effective colloid osmotic pressure. The compensatory redistribution of body water is largely from the extracellular space. There is a delayed transport of cellular water, which produces an increased potassium excretion and a negative potassium balance.[19]

As a fourth category of rate, the redistribution found in a burn or extensive local trauma should be considered.[20] It is a special case, occurring at a rate intermediate between hemorrhage and extracellular dehydration, and constitutes an instance in which interstitial space enlargement takes place at the expense both of cell water and of plasma volume. The result, in terms of balance, is a positive sodium balance with a negative potassium and nitrogen balance, the latter two of relatively minor import.[21] This alteration is greatly exaggerated in any situation in which renal excretion of sodium is impaired: the enlarged sodium space may indicate not only a large extracellular fluid but, in addition, a shift of sodium (and possibly chloride) into cells both in the traumatized area and elsewhere.[22]

RATES OF SOLID DEPLETION

Rates of loss of body solids may be considered in a fashion analogous to the foregoing section on rates of loss of body water (table 2). It is to be expected that the two will have some association with each other though not necessarily a linear relationship. For instance, following trauma an adaptive response (the alarm reaction) may produce a loss of body solids far out of proportion to losses of body water, whereas in intestinal obstruction water loss outstrips the rate of loss of solids.

It is instructive to consider the rate of loss of body solids in the various types of clinical situations which one encounters surgically. Rates of loss of body solids may be determined by balanced methods,[23] although methods for studying metabolic balances in the acutely ill surgical patient are fraught with many problems not seen in other clinical situations.[18] By making such studies, one may obtain a first approximation of the rate at which the body can deplete itself of certain essential constituents.

PROVISION OF CALORIES

The caloric need of the patient in all categories of depletion (simple starvation, intestinal starvation and the alarm reaction) is acute. By mouth its provision is a matter of no great difficulty, but in many surgical patients the provision of adequate calories orally is impossible because of the nature of the disease process. The parenteral provision of calories is unsatisfactory when dextrose alone is given, because the minimum of 2,000 calories required daily by the patient impose the need for giving prohibitive amounts of water intravenously or administering dextrose in concentrations which are irritating to vein walls and at times produce excessive glycosuria. Despite this fact there is evidence [17b,c] that in starvation amounts of dextrose as small as 50 to 100 Gm. may spare nitrogen to the extent of reducing nitrogen excretion by 50 per cent.

When intubation is not practical or feasible, intravenous caloric provision becomes essential. Intravenously given fat emulsions fill a need here which cannot be filled in any other way, because up to 1,600 calories may be provided by 1 liter of 15 per cent fat,[32] and the clinical effects of this infusion are most gratifying. A wan and haggard, starving patient is transformed in a few days into the picture of progressive convalescence. The work of Dr. Stare and his colleagues in this field will give the surgeon his most important weapon for dealing parenterally with starvation and depletion. Through the interest of the pharmaceutical industry fats for parenteral administration should soon become generally available.

PROVISION OF METABOLICALLY AVAILABLE NITROGEN

Because of the hydrolytic efficiency of peptic and tryptic digestion, orally ingested whole protein is equivalent to an injection of amino acids and small polypeptides into the portal vein. In planning oral protein therapy—seldom possible in surgical starvation—the contribution made by predigestion of the protein into amino-acids is solely that of more rapid assimilation from the intestine. Unless shortening of the small bowel exists, or some other absorptive defect, whole proteins are as useful as their split substitutes when given by mouth.

Intravenously, an entirely different situation exists. Since whole protein is only slowly broken down into the small complexes which can be devoted to other synthetic needs,[33] protein hydrolysates have a theoretic appeal; the nitrogen is readily available for any purpose to which the body may devote it. Their usefulness is vitiated by several facts: first, the nitrogen is excreted almost quantitatively during the postoperative adaptive period [34]; second, in the absence of adequate caloric nourishment the amino acids appear to be stripped of their nitrogen (which is then excreted), and the remaining carbohydrate is utilized for energy,[18] and third, the human body does not ordinarily take on protein hydrolysates through the systemic venous circuit, and they may not be as efficiently utilized when given in the systemic vein as they are when given into the portal vein and immediately processed by the liver.

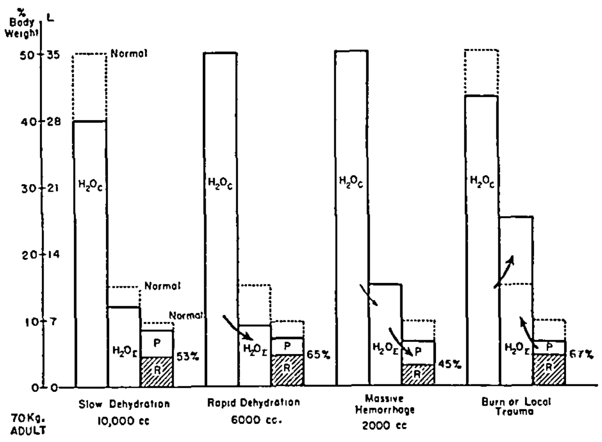

Fig. 8.—Types of water redistribution. A diagrammatic representation of the differences in compensation elicited by slow, rapid and very fast water redistribution. The ordinates are drawn proportional to body weight or phase volume and the heights of the columns demonstrate the approximate order of size of intracellular fluid (H_2O_C), interstitial fluid (H_2O_E), plasma (P) and red blood cell mass (R). The arrows demonstrate compensatory shift of water across the fast membrane (capillary) and the slow membrane (cell). With slow rates of water loss some compensatory distribution can take place across the cell membrane, whereas in arterial hemorrhage this can only occur in a delayed fashion and is relatively small in magnitude. Burn or local trauma produces a selective accumulation of extracellular fluid at the expense of both plasma and cell water. The figure opposite the plasma-red cell boundary indicates the approximate hematocrit reading.

One is therefore left with the conclusion that protein hydrolysates provide useful and available nitrogen intravenously when adequate calories are also available and when the patient is not in an immediately post-traumatic adaptive period of poor nitrogen utilization. These two limitations sharply confine the surgical usefulness of protein hydrolysates.

PROVISION OF OSMOTICALLY ACTIVE PROTEIN

Not infrequently the surgeon encounters situations in which normal or nearly normal renal function coexists with a low plasma albumin level and local or widespread edema. The edema fluid may accumulate in specific anatomic regions (gastrointestinal anastomoses, brain and lung) in which local resorption of edema fluid may have life-saving effects. This favorable situation for the use of concentrated albumin in surgical practice makes a decided contrast with the damaged kidney, albuminuria and tendency to accumulate ascitic fluid which characterizes many hypoalbuminemic medical patients. Although concentrated albumin passes through the capillary in a matter of hours after its administration, it may in the interim pull fluid back into the blood stream from edematous areas and present this fluid to the kidney for excretion in an extremely useful fashion. If the local change in capillary permeability (trauma, anastomosis or surgical operation) has healed, the edema may fail to reaccumulate and the albumin may perform a service which cannot be rendered in any other way.

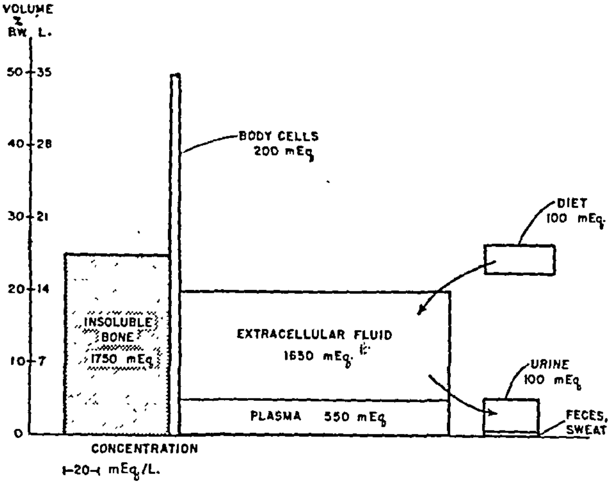

Fig. 9.—The normal sodium pool. In this and the subsequent seven figures (10 to 17, inclusive) is shown in a highly diagrammatic fashion the distribution of certain inorganic ions within the body. The ordinates are drawn proportional to phase volume and the abscissae proportional to concentration; the areas enclosed in the rectangles are roughly proportional to total mass. The normal distribution of sodium is largely extracellular, partitioned between interstitial fluid and plasma with a small quantity in the large phase volume of cell water and a considerable quantity (slowly exchangeable) in bone. The daily sodium flux moves largely through extracellular fluid.

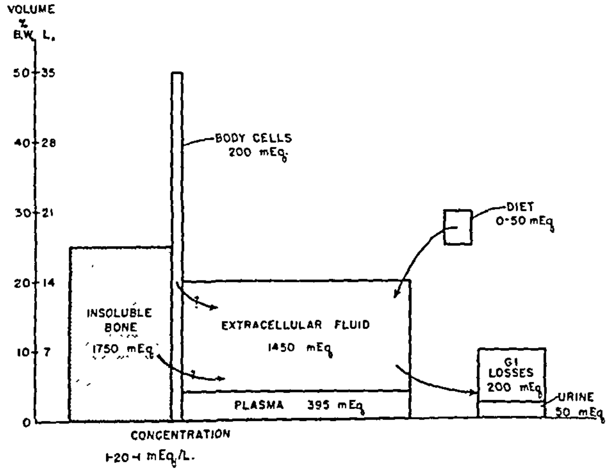

Fig. 10.—Sodium pool. Acute extracellular deficit due to gastrointestinal loss, with negative balance, 200 milliequivalents per day, for thirty-six hours. Gastrointestinal losses as in intestinal obstruction decrease both phase volume and concentration in the extracellular fluid. There is no clearcut evidence as to egress of sodium from bone.

The use of concentrated albumin in shock leaves much to be desired because of its poor fluid-holding properties over a twenty-four to forty-eight hour period.[36] The space-filling red blood cell provides a much more permanent increment to intravascular mass and is therefore of much greater use in the treatment of shock and hemorrhage.

The use of concentrated albumin to provide protein for nutritional purposes alone is indefensibly expensive. The chief effort expended in preparing concentrated albumin is its separation from the other plasma proteins and its preparation as a fivefold concentrate of plasma. Neither its separation from larger molecules nor its concentration are of any nutritional significance. As a matter of fact, there is evidence from studies on rats[37] *that albumin alone is a poor nutritional protein.* Despite these theoretic considerations, in the use of albumin for its nutritional (rather than its osmotic) effect there are situations in which its virus-free state is sorely tempting to the surgeon because he can give whole protein intravenously and produce retention of nitrogen (and in occasional cases elevate the plasma protein concentration) in a fashion that cannot otherwise be achieved.

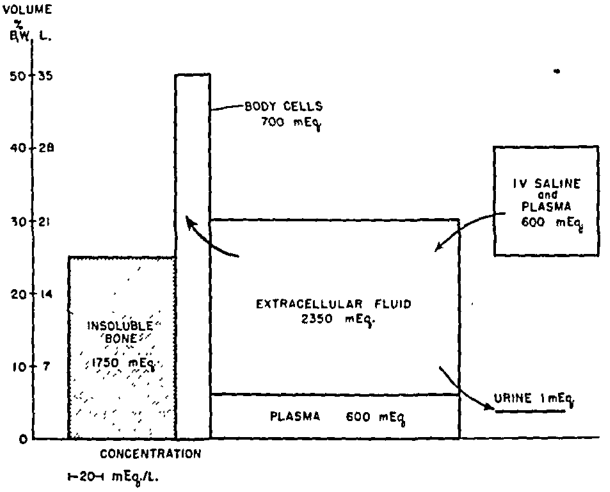

Fig. 12.—Sodium pool. Burns. In the acutely burned patient there is a tendency for the amount of sodium in the interstitial space to expand. This expansion will take place at the expense of the plasma volume, producing shock and death if sodium is not provided. The burn itself and the infusion of sodium both tend to produce some intracellular ingress of sodium and, as in the repair of gastrointestinal losses, phase volume increases while concentration falls; the infusion of large quantities of sodium is often unsuccessful in increasing sodium concentration.

PROVISION OF INTRACELLULAR ELECTROLYTE

The intracellular electrolyte pattern, potassium-phosphate-sulfate-magnesium, is one not ordinarily provided parenterally by the solutions most commonly given. This complex is needed in order for any synthesis of tissue to take place, as are the other building blocks of protoplasm. It is a simple matter to provide these minerals orally, because animal and plant tissues also contain these elements in large quantities. Parenteral provision of these substances is required in three types of situations met in surgical practice; since only potassium has been extensively studied from these points of view, I will limit my remarks to this element. In figures 9 through 16 are shown diagramatically some of the changes in electrolyte distribution observed in surgical patients.

1. *Chronic Intracellular Potassium Deficit.*—When pure starvation or intestinal starvation exists and can be repaired only by a prolonged parenteral regimen, the addition and provision of intracellular electrolyte is obviously essential, and this fact needs little further explanation. A starved patient who has lost 5 Kg. of muscle tissue needs, among other things, about 600 milliequivalents of potassium to rebuild it. But the concept that one can make him rebuild this tissue simply by giving him the building blocks through an intravenous needle is in radical need of revision. This tissue will not be rebuilt unless the endocrine stimulus for synthesis of tissue is present.

Chronic intracellular potassium deficit on the basis of starvation seldom coexists with a low plasma potassium concentration; most patients suffering from slow starvation maintain a normal extracellular concentration of intracellular electrolytes despite the fact that (at least at the outset) the loss of potassium exceeds the loss of nitrogen.

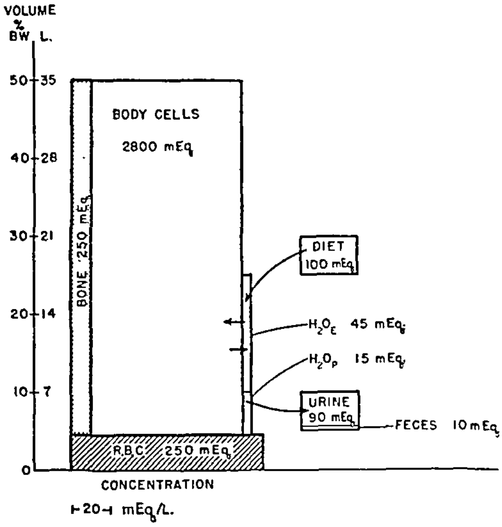

Fig. 13.—Potassium pool. Normal. In striking contrast to the distribution of sodium, only about 2 per cent of the body potassium is extracellular, 98 per cent residing in body cells, of which a certain fraction is in nonexchangeable or slowly exchangeable areas of the red blood cells and bone. The diet and excretion therefore represent a flux not only through extracellular fluid but also through the body cell mass, because in any given day the average adult takes in more potassium by mouth than is to be found in his entire extracellular space.

2. *Differential Intracellular Potassium Deficit.*—The imposing term, differential intracellular potassium deficit, accurately describes the situation so commonly seen in surgical practice in which electrolyte and water loss from cells outstrips the loss of nitrogen and matrix. A differential (disproportionately large) loss of potassium is therefore observed relative to cell proteins and structure. A normal plasma potassium concentration is the rule.

In table 3 are shown the data on which this concept is based; patients with intestinal obstruction, peritonitis, advanced stages of cancer, biliary disease and vomiting show this differential loss of potassium with regularity. The provision of potassium to such patients acquires an importance wholly apart from the provision of nitrogen, and these patients constitute the only true examples of acute potassium deficiency seen in surgical practice. The administration of potassium to a small series of severely depleted patients over periods of many weeks produced several beneficial effects: the maintenance of normal extracellular electrolyte and protein concentrations and urinary output has been found to be simpler; normal muscle tone and intestinal peristaltic activity are readily maintained, and the clinical improvement of the patient is disproportionate to the dose of potassium either in relation to previous losses or to the continuing balance. The presumption is that these clinical and chemical effects relate not only to the repair of losses but also to the blocking of intracellular ingress of sodium.

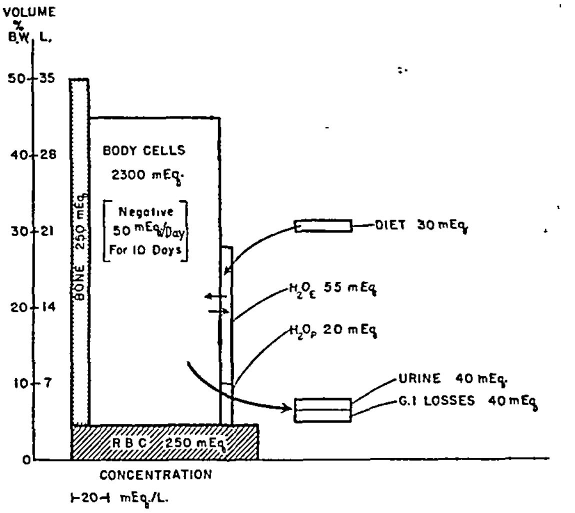

Fig. 14.—Potassium pool. Differential intracellular deficiency (chronic) in patient with normal renal function. This demonstrates the type of situation most commonly seen in surgical patients in whom loss of potassium has occurred largely from body cells and in a fashion disproportionately large with relation to the cell matrix (see table 3). Since the plasma represents a transport area for potassium (and possibly because of endocrine regulation of the extracellular potassium concentration), potassium is often maintained at normal levels despite this cellular depletion. It is clear that the infusion of large amounts of potassium will not rectify this situation unless time is allowed for this potassium to enter the cell.

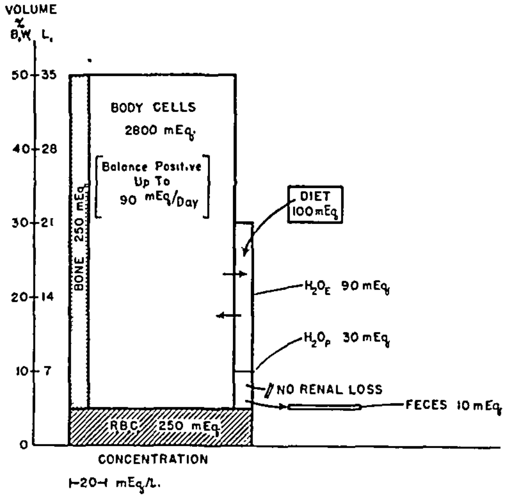

Fig. 15.—Potassium pool. Acute extracellular excess in patient with renal failure. This situation produces an increase in extracellular potassium concentration because the normal route of potassium loss has been shut off. Normal catabolic processes continue, and in many cases potassium intake is unknowingly or unintentionally continued with the result that potassium "piles up" in the body and spills over into the extracellular space. Extracellular concentrations of potassium as high as 8 to 9 milliequivalents per liter may be observed with electrocardiographic changes and peripheral paralysis.

3. *Acute Extracellular Potassium Deficit.*—The term acute extracellular potassium deficit is used to denote a low plasma concentration of potassium in the presence of variable cellular reserves; an acute derangement of water and electrolyte distribution not uncommonly observed in states of acute intestinal depletion (dysentery, colitis) and in more chronic states of alkalosis with a low chloride, high bicarbonate and normal sodium level and, occasionally, nitrogen retention.[38] Such a situation may result from sodium-potassium shifts across the cell and can be prevented or repaired by infusions of potassium. It is occasionally observed after extensive surgery or trauma and in acute derangements of acid-base balance, yet it is much rarer in my experience than the intracellular loss with normal plasma potassium, mentioned previously.

PROVISION OF SODIUM WITH DISPOSABLE ANION

Infusion of isotonic sodium chloride solution has had a usefulness of historic magnitude over a twenty year period as the only form of intravenous electrolyte therapy. This is true despite the fact that it has 10 per cent more sodium than plasma and 50 per cent more chloride; its only excuse for being is that it is isotonic and provides two important extracellular ions in a form that is not readily capable of misuse.

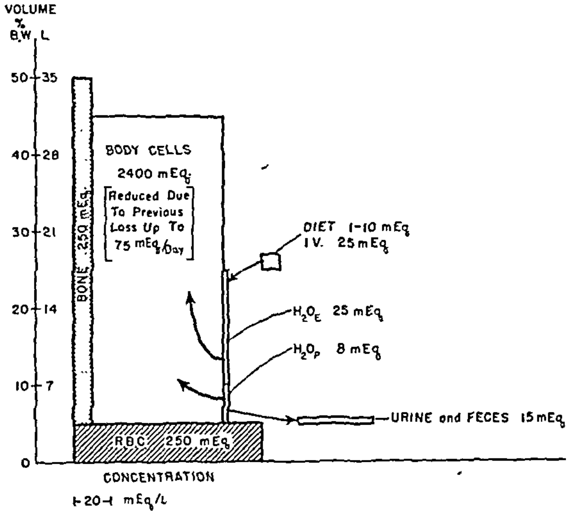

Fig. 16.—Potassium pool. Acute extracellular deficit in patient with treated diabetic acidosis. This demonstrates the type of potassium deficiency seen in treated diabetic acidosis. The pre-existent depletion of potassium (Atchley, Loeb, Richards, Benedict and Driscoll, *J. Clin. Investigation* **12:** *297,* 1923) has reduced the cellular reservoir, and the only available potassium with which this metabolism of glucose can take place is extracellular. Potassium has passed into the previously depleted cell, presumably because of glycogenesis and the oxidation of glucose in response to administration of insulin. The result is a drop in extracellular potassium concentration.

Of all its shortcomings, the most readily correctable is its overabundance of inorganic anion. When 25 to 30 per cent of the chloride is replaced by bicarbonate, which can be disposed of by the lungs, or lactate, which can be oxidized, a solution is produced which has a wide range of usefulness in the replacement of extracellular losses.

PROVISION OF INTRAVASCULAR MASS

Plasma volume replacement in the face of acute loss by the ingress of the interstitial fluid into plasma is a well understood phenomenon.[47] This hemodilution has survival value for the obvious reason that it maintains intravascular mass, however tenuously. It is an internal compensation which must be taken into consideration in planning treatment, especially when treatment has been delayed after the hemorrhage. If retransfusion of all the missing blood is carried out after this internal rearrangement has occurred, an increase in blood volume is produced which may be embarrassing to the heart with low reserve. For this reason, immediate quantitative replacement of blood should be attempted whenever possible. If impossible, late replacement should be undertaken with caution. The use of concentrated cells or protein makes a significant contribution in such situations.

After a serious hemorrhage produces shock, the restoration of circulating blood volume by the infusion of fluid, electrolyte and colloid is notoriously unsatisfactory. The reason is to be found in the transfer of all these substances from the plasma volume to the extracellular phase. In the face of reduced blood volume and blood pressure, they are therefore of but temporary benefit. Any solution containing red blood cells is effective in maintaining blood volume because of the space-occupying property of the red cell particles; no substitute for this large vascular particle will be found to be satisfactory unless it has approximately the same particulate dimension as the red cell.

THE NEED TO BE LEFT ALONE

In the face of this impressive armamentarium of parenteral means of satisfying the needs of the depleted surgical patient, the surgeon is tempted to belabor the patient throughout convalescence with a host of intravenous supplements. It has been a fad in the recent literature to discover methods for covering up postoperative adaptations (the alarm reaction) by the infusion of vast quantities of protein nitrogen or electrolyte either before, during or after convalescence.[48] For many reasons, including its common performance, the operation of subtotal gastrectomy has been selected as the test case or *cause célèbre* in this connection and indeed it makes a good operation to examine from the point of view of supplementation. If a starving patient with an obstructing gastric or duodenal lesion is to undergo surgical treatment full consideration must be given to his nutritional problem, including the use of many of the intravenous devices that have been mentioned in this article, and this attention is best given in the preoperative period when utilization is more satisfactory than early in convalescence.

When a person with no nutritional deficit has had a subtotal gastrectomy performed convalescence is best accomplished by bearing in mind the fact that the human being is well adapted to survival from a single trauma, provided that the normal train of adaptive responses is not upset by meddlesome therapy. To crowd such a patient with mixed electrolyte solutions, protein hydrolysate, concentrated albumin and jejunostomy feeding is to deny the success of an evolutionary process which has produced an organism quite able to survive a single massive trauma with short term interruption of oral intake.

The outcome in a patient in whom a normal alarm reaction develops with his drop in nitrogen balance and loss of potassium is not as much to be feared as that in the depleted or starved patient whose response to surgical intervention is metabolically negligible. Therefore the preoperative evaluation of adrenal cortical function by the eosinopenic response to epinephrine or to adrenocorticotropic hormone [49] and the employment of stimulatory or replacement steroid therapy in cases of poor adrenocortical reserve may guide the surgeon out of many difficulties. Along with the development of fat emulsion and virus-free dried plasma, this constitutes the surgical nutrition of the future. By such preoperative studies unresponsive patients can be singled out of the preoperative group, and by nutritional and endocrine means it may be possible to improve their adrenocortical reserve for the extensive procedures now included in the wide range of the surgeon's scalpel.

SUMMARY

1. A consideration of the rate of transfer of water, electrolytes, colloid and red blood cells across body membranes, as measured by isotope technics, leads to a better understanding of the internal adjustments which the body makes to trauma, depletion and disease.

2. Rates of loss of water and solids from the body may be arranged in an orderly sequence. These are determined by the intrinsic rates of transfer of substances within the water-soluble area of the body.

3. Based on such data, it is possible to rationalize the needs of the patient for supportive therapy; the intravenous provision of emulsified fat, intracellular electrolytes, metabolically available nitrogen, osmotically active protein and sodium with disposable anion may be evaluated within this framework.

4. Despite the usefulness of these new weapons in combating the depleted state of starved patients approaching surgical intervention or in patients who have become starved following the complications of a surgical operation one is left with the important fact that the previously well person who undergoes surgical treatment is able to tolerate a single trauma with gratifying convalescence provided the surgeon does nothing to interrupt the compensatory mechanisms of nature.

ABSTRACT OF DISCUSSION

DR. CARL A. MOYER, Dallas: Dr. Moore's work is particularly applicable to the ultimate understanding of the forces involved in the movement of water and ions from one compartment of the body to another. Investigations such as this will lead, without a doubt, to improvements in the care of sick persons—preoperatively and postoperatively.

DR. FRANCIS D. MOORE, Boston: In the low concentrations (less than 0.1 atoms per cent), with which one must work, the chances are, and the biologic evidence at hand proves, that deuterium moves much as water does. Furthermore, since deuterium has twice the mass of hydrogen any differences would result in an even faster equilibrium rate for hydrogen. Interest in intracellular chemistry and surgery is great, and progress from research work to therapy is rapid, and that is good—that is the way surgery moves ahead—but at the same time one must be careful and one must be skeptical. When one puts a needle into a vein and injects sodium chloride or bicarbonate, the needle is in the very compartment in which one wants that water and electrolyte to be, namely, the extracellular space, but when one puts the same needle in the same vein and injects a solution containing potassium or phosphate, the needle is separated from its target by a special membrane, namely, the cell. The cell will transfer these substances at its own rate, unaffected by their mere availability in extracellular fluid. The most practical possible outcome of this type of research work and its attendant discussion is the increased skill and knowledge brought to bear on the daily problems of convalescence encountered by the surgeon in his practice.

HYPERFUNCTIONING TUMORS OF THE ADRENAL CORTEX

Study of Nine Cases

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and
RANDALL G. SPRAGUE, M.D.
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The earlier literature dealing with tumors of the adrenal cortex contains frequent references to the "adrenal cortical syndrome." With closer study of more cases, it has become apparent that there is no single syndrome which is characteristic of adrenal cortical hyperfunction. Rather, the clinical pictures associated with hyperfunction of the adrenal cortex are extremely protean in nature and presumably depend on the type and quantity of steroid hormones produced, the age and sex of the patient and perhaps on other factors.

In recent years the combined efforts of internists, pediatricians, chemists (particularly the steroid chemists), physiologists and surgeons have resulted in substantial additions to knowledge of the syndromes associated with hyperfunctioning new growths of the adrenal cortex. Methods have been developed for the assay of urinary steroids, which are helpful in diagnosis and in determining the results of treatment. For patients presenting clinical syndromes known to be associated with hyperfunction of the adrenal cortex, the problem of differentiating between tumor and hyperplasia has been simplified, though not entirely solved, by methods of urinary assay.[1]

Although no classification of syndromes is entirely satisfactory, the one proposed by Kenyon [2] is excellent. He recognized six types of clinical syndrome, namely:

TABLE 1.—*Symptoms of Tumors of the Adrenal Cortex**

1. Nonendocrine symptoms
2. Symptoms dependent on age and sex
   Boys: Homologous sexual and somatic precocity
   Girls: Sexual and somatic precocity, usually heterologous; sometimes uterine bleeding and enlargement of the breasts
   Men: Feminization
   Women: Varying degrees of virilism
3. Symptoms independent of age and sex
   Altered habitus
      Facial and abdominal obesity
      Kyphosis
      Thin arms and legs
   Purplish striae and ecchymoses
   High color
   Hypertension
   Osteoporosis
   Diabetes
   Acne
   Polycythemia
   Hypochloremic alkalosis
   Purpuric ecchymoses
   Fatigue
   Muscular atrophy

* The table is taken with slight modification from Kepler, Sprague, Mason and Power.[3]

From the Division of Surgery and the Division of Medicine, Mayo Clinic.

Read before the Section on Urology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

[1] Present day knowledge of the neutral steroids that appear in urine of human beings in normal and abnormal states has recently been the subject of an extensive review (Engstrom, W. W.: Nature and Significance of Neutral Steroids in Human Urine in Normal and in Abnormal States, with a Preliminary Consideration of the Adrenal and Gonadal Steriods and the Factors Which Influence Their Secretion and Biological Action, Yale J. Biol. & Med. **21**: 21-85 [Oct.] 1948).

[2] Kenyon, A. T.: Adrenal Cortical Tumors: Physiologic Considerations, Surgery **16**: 194-232 (Aug.) 1944.

(1) the adrenogenital syndrome; (2) Cushing's syndrome; (3) mixed clinical pictures including features of the first two; (4) a type characterized by single or isolated endocrine manifestations; (5) feminizing syndromes, that is, feminization of men or homologous sexual precocity in girls, and (6) tumors without endocrine manifestations. The characteristics of these syndromes have been discussed by Kepler, Sprague, Mason and Power.[3]

Inclusive as this classification is, clinicians have been aware for some time that in an appreciable number of the cases the manifestations do not conform to any of the aforementioned clinical syndromes. In such cases the clinical picture is usually mixed or incomplete and consequently defies precise classification.

Among the most spectacular of the changes produced by tumors of the adrenal cortex are those of the sexual aspect. In young boys sexual precocity of the masculine type, in combination with somatic precocity, may occur. In young girls, on the other hand, sexual precocity is likely to be heterologous, or masculine, in character, although homologous sexual precocity with uterine bleeding and enlargement of the breasts occasionally occurs. In adult men the sexual changes are rarely observed, because a masculinizing tumor is not likely to enhance the masculinity of a male, and feminizing tumors are excessively rare in adult males. In adult women, on the other hand, heterosexual changes are relatively common. For example, amenorrhea develops; the breasts assume a more masculine type; the clitoris hypertrophies, and alopecia of the scalp in association with hirsutism and acne of the face, extremities, chest and lower part of the abdomen may occur. The term "adrenogenital syndrome" may properly be applied in cases in which changes in the direction of increased masculinity dominate the clinical picture.

The endocrine and metabolic signs and symptoms which bear no consistent relationship to the age and sex of the patient (table 1) represent an extremely varied group of disturbances. Their most complete development occurs in Cushing's syndrome,[4] but they may occur in varying degree among patients who do not present the complete clinical picture described by Cushing.[5] For example, one of the patients in our series showed some of the features of virilization (hirsutism of the face and extremities and amenorrhea) but in addition exhibited some of the endocrine and metabolic manifestations of Cushing's syndrome (hypertension, ecchymosis, diabetes and a hyperchloremic, hypokaliemic alkalosis). Other patients presenting mixed or incomplete clinical syndromes are seen not uncommonly. As already indicated, these intermediate clinical pictures are most difficult to fit into a rigid classification of syndromes.

HORMONES OF THE ADRENAL CORTEX

To date, twenty-seven steroids have been isolated in crystalline form from the adrenal glands of animals, and their chemical structure has been determined. A considerable number have no demonstrable physiologic activity. Others have striking metabolic effects. Those which have been shown to have physiologic activity fall into several principal groups[6] as indicated in table 2. In table 2 also the compound and its effects are correlated with the signs and symptoms produced by excessive amounts. In some instances these correlations are presumptive rather than definitely established.

TABLE 2.—*Active Compounds Isolated from the Adrenal Cortex**

Compound	Effect	Clinical Symptoms and Signs Which Might Result from Overproduction †
1. Desoxycorticosterone	Salt and water metabolism	Retention of salt and water—edema, hypertension and congestive heart failure; increase in urinary content of potassium; profound muscular weakness
2. 17-hydroxy-11-dehydrocorticosterone (compound E) 11-dehydrocorticosterone (compound A) [illegible]	Carbohydrate and protein metabolism	Negative nitrogen balance, thinning of skin, muscular wasting and weakness, osteoporosis, ecchymosis, diabetes, lymphopenia, eosinopenia
3. 11-dehydrocorticosterone (compound A) Corticosterone (compound B)	Fat metabolism (?)	Obesity (?)
4. Androstenedione 11-hydroxy-iso-androsterone *Adrenosterone* 17-hydroxyprogesterone	Androgenic effect	Virilism: hirsutism, baldness, amenorrhea, florid skin, hypertrophy of clitoris, acne, masculinization of habitus and voice in women, sexual and somatic precocity in children
5. Estrone	Estrogenic effect	Vaginal bleeding and sexual precocity in female children; impotence and gynecomastia in men
Progesterone	Progestational effect	

* The table is taken with modifications from Kepler, Sprague, Mason and Power.[3]

† The fact that recently numerous symptoms and signs reminiscent of Cushing's syndrome have been induced in patients with large doses of compound E (17-hydroxy-11-dehydrocorticosterone) may call for some revision of present concepts of the pathogenesis of Cushing's syndrome.

One of us (W. W.) has operated in 9 cases of the hyperfunctioning tumor of the adrenal cortex (since our report of 10 cases in 1934 and 7 in 1938). In 8 of these 9 cases the urinary content of the 17-ketosteroids was studied, and in 3 cases the urinary content of the corticosteroids (reducing steroids) was determined by a modification of the chemical method of Lowenstein, Corcoran and Page,[7] both before and after operation. In 1 case, that of a man 62 years of age, in which studies of the excretion of hormones were not performed, no obvious endocrine signs or symptoms were associated with a huge left retroperitoneal tumor. The fact that the tumor was a hyperfunctioning carcinoma of the adrenal cortex was not recognized until microscopic examination of the tumor, which weighed 2,685 Gm., and the development of symptoms of postoperative insufficiency of adrenal cortex. The latter were corrected by the administration of adrenal cortex extract. The reduction in the values for 17-ketosteroids after the removal of the hyperfunctioning adrenal cortical tumors in 8 cases is striking (table 3). A reduction of the corticosteroids after removal of the hyperfunctioning adrenal cortical tumors in 3 cases was also observed.

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[3] Kepler, E. J.; Sprague, R. G.; Mason, H. L., and Power, M. H.: The Pathologic Physiology of Adrenal Cortical Tumors and Cushing's Syndrome, in Recent Progress in Hormone Research, the Proceedings of the Laurentian Hormone Conference, New York, Academic Press, Inc., 1948, vol. 2, pp. 345-389.

[4] In speaking of Cushing's syndrome we are referring to the clinical picture described by Cushing and not specifically to the pathologic basis of this syndrome. In the past it has been thought that Cushing's syndrome is always associated with a basophilic tumor of the anterior lobe of the pituitary gland. Our experience, as well as that of others, has shown on the contrary that this syndrome may occur in the absence of a basophilic tumor of the pituitary gland but is probably always associated with hyperfunction of the cortex of the adrenal gland.

[5] Cushing, H.: Basophil Adenomas of Pituitary Body and Their Clinical Manifestations (Pituitary Basophilism), Bull. Johns Hopkins Hosp. **50**: 137-195 (March) 1932.

[6] *It is realized that the boundaries between groups are not always well defined. A compound in one group may have some physiologic effects characteristic of the members of another group. The grouping is based on the predominant activities of* [illegible]

[7] Lowenstein, B. E.; Corcor[illegible] H.: Determination of Corticosteroids in Urine, [illegible] **39**: 82 (July) 1946.

No deaths have occurred in the group of patients who have undergone removal of adrenal cortical tumors since use of this method of preoperative and postoperative treatment was begun. As much cannot be said concerning patients with Cushing's disease on whom partial adrenalectomy has been performed. In our experience the risk of operating on patients of the latter type has been high, but this subject is outside the scope of our paper and will be discussed at a later date.

SURGICAL EXPOSURE AND OTHER CONSIDERATIONS

Air has been injected around the upper pole of the kidney and the adrenal glands to permit roentgenologic visualization in some cases. This procedure, however, has sometimes been followed by untoward reactions and has failed to reveal evidence of small tumors. The low mortality rate following operative exposure of the entire adrenal glands, the accuracy of examination and the opportunity for removal or resection of an adrenal gland have led us to use operative exposure instead in cases in which a clinical and chemical study has suggested the presence of a tumor.

The decision concerning which adrenal gland should be exposed first is extremely pertinent if a functioning tumor is suspected. If a tumor is found on the first side explored, it is currently considered unnecessary to expose both adrenal glands, as we have not yet encountered a case of bilateral hyperfunctioning neoplasm of the adrenal cortex. If the location of the tumor can be determined in advance of operation, only the side in which the tumor is present need be exposed. Ordinarily the opposite gland has undergone atrophy from disuse.

The approach which one of us (W. W.) most frequently uses consists of a posterolumbar incision like

Table 3.—*Type of Clinical Syndrome, Pathologic Diagnosis, Excretion of 17-Ketosteroids and Corticosteroids and Results of Dextrose Tolerance Tests in 9 Cases*

Case	Age, Yr.	Sex	Clinical Syndrome	Pathologic Diagnosis Adrenal Cortex	Time of Test	17-Ketosteroids, Mg. Per 24 Hr.	Corticosteroids, Mg.	Dextrose Tolerance
1	62	♂	No endocrine manifestations	Adenocarcinoma, gr. 3, 2,685 Gm.	No examination of urine for excreted hormones			
2	27	♀	Adrenogenital syndrome	Carcinoma, gr. 2, 25 cm. in diameter	Before operation	241 average for 3 days	.....	Diabetic curve
					Immediate p. o. period	2.1 average for 10 days	.....	
					4 mo. p. o.	10.3	.....	
					11 mo. p. o.	8.6	.....	
					24 mo. p. o.	7.0	.....	
3	45	♀	Adrenogenital syndrome	Adenocarcinoma, gr. 3+, 460 Gm.	Before operation	170.0	.....	
					2 days p. o.	<1.0	.....	
					14 days p. o.	6.9	.....	
4	24	♀	*Cushing's syndrome*	Adenocarcinoma, low gr. 1, encapsulated, 10.5 Gm.	Before operation	7.3	1.101	Diabetic curve
						3.5	.....	
					4 occ. in 1st 4 wk. p. o.	2.9; 1.0; 0.7; 1.1	....	
					3 wk. p. o.	...	0.563	
					6 mo. p. o.	1.6	.....	
5	15 mo.	♂	Mixed picture	Adenocarcinoma, gr. 2, 40 Gm.	Before operation	4.1	.....	
					Immediate p. o. period	0.2	.....	
					9 mo. p. o.	0.2	.....	
6	42	♀	Mixed picture	Adenocarcinoma, gr. 3, 100 Gm.	Before operation	3.2	1.04	Diabetic curve
					p. o.	0.5	0.438	
						2.1	.....	
7	50	♀	Cushing's syndrome	Hyperplastic adenoma, 7.25 Gm.	Before operation	4.9	1.59	Diabetic curve
						6.7	.....	
					Immediate p. o. period	0.9 0.7	..... 0.25	
					5 mo. p. o.	1.6	0.35	Normal curve
8	10 mo.	♀	Mixed picture	Carcinoma, gr. 2, 36 Gm.	3 mo. before operation	6.2	.....	
					Immediately before operation	6.8	.....	
					10 days p. o.	0.3	.....	
					9 mo. p. o.	0	.....	
9	32	♀	Cushing's syndrome (incomplete)	Cellular adenoma, 8 Gm.	Before operation	2.4	3.31	
					Immediate p. o. period	2.2	.....	

PREOPERATIVE AND POSTOPERATIVE TREATMENT WITH ADRENAL CORTEX EXTRACT

Because of the possibility that acute adrenal insufficiency may occur after operation for removal of a hyperfunctioning tumor of the cortex of the adrenal gland, prophylactic measures are instituted in all cases.

Briefly, the preoperative preparation consists of intramuscular administration of 20 to 50 cc. of adrenocortical extract the evening before the operation, and intravenous administration of another dose of the same size in 1 liter of isotonic sodium chloride solution on the morning of the operation. Immediately after excision of the tumor an additional 50 cc. of adrenal cortex extract is administered intravenously. For several days after the operation from 50 to 100 cc. of the extract is given daily; the dose is gradually decreased before the use of the extract is discontinued. If the patient is a child, smaller amounts of extract and fluid are employed. Occasionally desoxycorticosterone acetate is administered in doses of 5 to 10 mg. intramuscularly the morning of the operation.

that employed for operations on the kidney. The patient lies on the opposite side. Advantages of this approach are that accurate visualization of each gland is possible and the exposure is adequate to deal with whatever type of lesion is encountered. Bilateral incisions are made whenever necessary.

Probably the most important consideration from the surgical point of view is the procedure to follow after the adrenal glands are exposed. When a tumor is encountered, there is little question about the procedure. The tumor should be removed in its entirety. Usually this can be accomplished. In our opinion it is usually advisable to remove the involved gland completely, since most of the tumors are cancerous.

Results following removal of a hyperfunctioning tumor of the adrenal cortex are good in general and are excellent if the lesion is benign. Acne and as a rule hirsutism when present before operation disappear; menstruation and a normal female contour of the breasts return in the adult female. In the female child vaginal bleeding ceases, but the precocious development of the breasts may remain until normal changes occur at puberty. If the tumor has caused lowering of the voice in the female, the pitch may be raised but usually not to normal levels. In other words, the appearance reverts to that normal for the patient and the function of the sexual organs returns to reasonably near normal.

SUMMARY

Hyperfunctioning tumors of the adrenal cortex are capable of producing a wide variety of clinical syndromes, some of which defy precise classification. Many of the symptoms produced by such tumors are tentatively explainable on the basis of overproduction of certain steroid hormones of the adrenal cortex whose physiologic effects are fairly well understood.

Certain clinical data obtained in 9 cases of tumor of the adrenal cortex in which surgical treatment was employed are reviewed. In each instance in which the urinary content of 17-ketosteroids and corticosteroids (reducing steroids) was estimated preoperatively and postoperatively, it was noted as expected that a sharp decrease followed excision of the tumor, even though preoperatively the excretion of these steroids was normal.

Several aspects of the surgical treatment of tumor of the adrenal cortex are discussed. Important among these is adequate preoperative and postoperative treatment with adrenal cortex extract and isotonic sodium chloride solution in order to prevent fatal insufficiency of the adrenal cortex, owing to atrophy of the contralateral adrenal gland, within the first few days after removal of the tumor.

ABSTRACT OF DISCUSSION

Dr. M. M. Melicow, New York: Dr. Cahill has performed over 500 air insufflations without fatality or significant untoward reaction. In every case in which the aerogram was indicative of neoplasm, one was found at operation. Our preoperative and postoperative treatment was essentially the same as that of Drs. Walters and Sprague. Our postoperative results in patients with tumor were better than in patients without tumor. Hirsutism receded except in patients who shaved. We found that neoplasm was the unusual concomitant of the various syndromes, and we are of the opinion that hyperfunction and/or dysfunction of the adrenal cortex may, but need not, be associated with hyperplasia or neoplasia, benign or malignant, unilateral or bilateral. The ratio of benign to malignant tumors was approximately 3 to 1. Microscopically it was difficult to tell malignancy from benignity; unless gross extension or microscopic invasion or metastasis had occurred. We have passed through the period when the gonads were considered the most important elements in the endocrine chain and into the era of the pituitary, the master gland. Now we are in the age of the adrenal gland.

Dr. Hugh J. Jewett, Baltimore: I would like to ask Dr. Walters what considerations led him to use the lumbar approach in preference to a transverse upper abdominal incision, and whether he has any information in regard to the incidence of congenital absence of one adrenal.

Dr. Waltman Walters, Rochester, Minn.: In regard to Dr. Jewett's questions, I have never had any confidence that the accurate identification of small tumors of the adrenal glands can be achieved through a transverse or a vertical upper abdominal incision. That is the reason I do not use it. The easiest and the most accurate way to expose the adrenal gland is the same as that for the exposure of the kidney—through a posterior lumbar incision. I have never seen a case of congenital absence of one adrenal gland, although I realize that such cases have been reported. I have seen patients who had exceedingly small adrenal glands on one side and hyperfunctioning adenomas on the other. Apropos of injection of air, I must say I do not like it. I consider it unsurgical for two reasons: First, the surgeon cannot know precisely where he is putting the air and if the air is injected in the wrong place you know what happens. Second, I do not think it is as accurate as the visual exposure of the gland. Moreover, in a patient who has symptoms of hyperfunctioning of the adrenal, the surgeon is going to operate on the patient with the expectation either of removing a tumor or of performing subtotal adrenalectomy if the clinical picture is that of Cushing's syndrome. In most cases I can see no advantage in the injection of air to determine whether or not a tumor is present. If air is injected around the kidney and around the adrenal gland, it may not be safe to perform operation on those patients immediately for fear of air embolism. This may cause a delay of not only many days but weeks. In regard to the observation of Drs. Melicow and Cahill that some of the female patients with well developed beards continue to have a beard even after the removal of the adrenal cortical tumor, this is a true and distressing fact, for the facial hirsutism is frequently the aspect which is most distressing to the patient. However, it has been my experience in most cases that the hirsutism has disappeared, as has the buffalo-like type of obesity, and menstrual function has returned. Our experiences with the incidence of benign to malignant tumors of the adrenal cortex is about the reverse of that in the series reported by Drs. Melicow and Cahill. The ratio of malignant to benign lesions in our cases is approximately 3 to 1. Unfortunately, we have been able to confirm that in 2 or 3 cases recurrences have taken place, with a return of symptoms of adrenal cortical hyperfunction and eventual death from metastatic cancer.

Pavlov.—This month (September) marks the 100th anniversary of the birth of Ivan Petrovich Pavlov. The great Russian physiologist, who died only 13 years ago, was one of those rare personages in science whose work was known in every country during his own time. . . . Pavlov was a man with obvious natural gifts—a brilliant mind, an incomparable memory, boundless energy and immeasurable enthusiasm—but with all that he remained to the end of his life a transparently simple human being. His laboratory in Leningrad when I worked under him was a tumultuous beehive. Pavlov was then over 80 years old, nonetheless, he still possessed a vast enthusiasm for scientific investigation which he communicated to all those around him. He was the moving spirit in most of the laboratory's projects, and he would greet the successful completion of an experiment with a dance of joy. His laboratory was operated like a town meeting; on Wednesdays his several dozen scientific associates gathered to discuss and argue their problems. Pavlov, who had a gift for dramatic narrative, fascinated his colleagues. He fought tooth and nail for his ideas against all arguments; but after he had cooled down he was quick to admit his error if his opponent turned out to be right. —Jerzy Konorski, *Scientific American*, September 1949.

Clinical Notes, Suggestions and New Instruments

ECZEMA VACCINATUM

Rapid Recovery Following Treatment with Aureomycin

FREDERICK G. PERRY, M.D.
and
P. C. MARTINEAU, M D.
Fort Wayne, Ind.

Eczema vaccinatum is a form of generalized vaccinia found in persons, usually infants and children under 5 years of age, with a history of atopic eczema. It is an acute febrile disease with a mortality rate of 33 per cent, according to McKhann and Ross.[1]

A review of previously reported cases may be found in reports by Collett and Kennedy,[2] Ellis [3] and Tedder.[4] Ellis [3] expressed his belief that the vaccinia virus in eczema vaccinatum is circulated by the blood stream and that it tends to localize in traumatized areas of epidermis. He discounted the theory of spread of the virus by autoinoculation. The vesicular lesions of eczema vaccinatum have been reported to occur in almost all areas of the body, including such unusual sites as the eyelids, corneas, tongue, nasal septum and genitalia.

The vesicles appear suddenly and in several large crops during a period of about forty-eight hours. They are multiloculated and at first are filled with a crystal clear fluid. Later the central portion undergoes necrosis and may become secondarily infected and purulent. Most of the lesions appear on the previously eczematous skin, although some vesicles may develop on surrounding and apparently normal areas. The regional lymph nodes become enlarged, painful and extremely tender. The eruption is preceded by a period of headache, malaise, drowsiness and fever usually less than twenty-four hours in duration. Most of the deaths reported have been caused by general sepsis or encephalitis. In milder cases the lesions begin to regress and dry up on the seventh to the tenth day. Crusts are formed which are shed about the fourteenth day, leaving pitted scars.

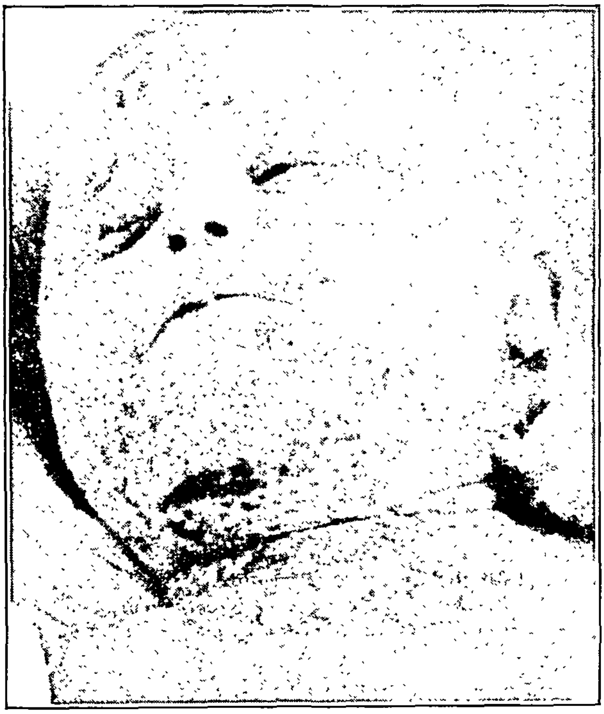

Fig. 1.—R. W. on the fourth day of illness, showing lesions of face, neck and upper part of the chest.

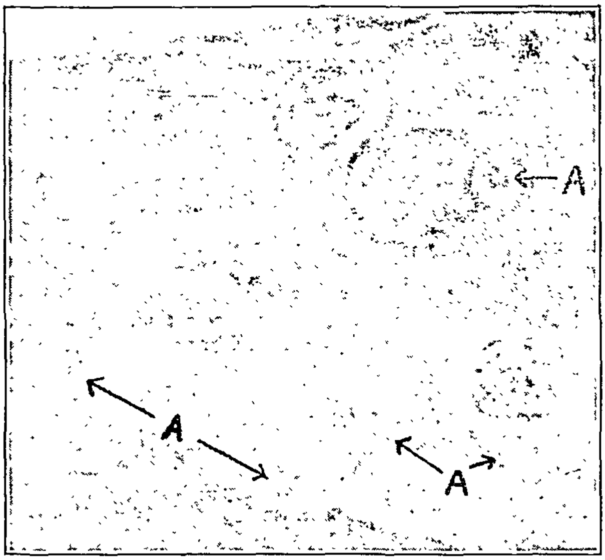

Fig. 2.—Section of rabbit's cornea showing Guarnieri's bodies (*A*). Positive Paul's test on R. W. (hematoxylin and eosin, × 2,600).

The differential diagnosis of eczema vaccinatum from Kaposi's varicelliform eruption (pustulosis vacciniformis acuta), a condition caused by the virus of herpes simplex, has been said by Tedder [4] to be impossible on clinical grounds alone. Ronchese [5] has expressed his opinion that these two conditions are identical. However, in spite of the clinical similarities of these two diseases the causative viruses isolated from them are entirely different (Barton and Brunsting [6] and Ebert [7]).

Paul's test is the most convenient laboratory method of distinguishing between the two diseases. In cases of eczema vaccinatum acidophilic intracytoplasmic inclusion bodies are found, but in Kaposi's varicelliform eruption much smaller basophilic intranuclear inclusion bodies are present.

The history of the exposure of a patient to the vaccinia virus during the period two to three weeks immediately preceding the onset of the disease is also of great diagnostic value, as is shown in the following case report.

REPORT OF CASE

R. W.,[8] a boy aged 2 years, had had a history of atopic eczema since 3 weeks of age. On May 7, 1949 and the next day he played indoors with a child who had been vaccinated for smallpox on April 20, 1949. He sat next to her as they examined a book together. The vaccination wound on the arm of his playmate was uncovered and was in the crusted stage.

Four days later the child became acutely ill; he was drowsy and listless, and he had a high fever. After about twelve hours a vesicular eruption appeared on his neck; during the next two days it spread so rapidly that on May 14, when he was admitted to the Lutheran Hospital, umbilicated vesicles were present on the cheeks, the lateral aspects of the face and neck, the anterior aspect of the upper part of the chest,

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Dermatologist, Duemling Clinic (Dr. Perry), and Pathologist, Lutheran Hospital (Dr. Martineau).

Dr. Michael Ebert, associate clinical professor of dermatology, University of Illinois College of Medicine, assisted in handling this case.

[1] McKhann, C. F., and Ross, R. A: Generalized Vaccinia and Eczema Vaccinatum, M. Clin. North America **22:** 785, 1938.

[2] Collett, R. W., and Kennedy, R. L., Jr.: Accidental Vaccinia: *Report of Two Cases in Infants, with Eczema Vaccinatum in One Case,* J. Pediat. **34:** 284, 1949.

[3] Ellis, F. A.: Eczema Vaccinatum: Its Relation to Generalized Vaccinia; Report of Two Cases, J. A. M. A. **104:** 1891 (May 25) 1935.

[4] Tedder, J. W.: Eczema Vaccinatum, Arch. Dermat. & Syph. **34:** 1008 (Dec.) 1936.

[5] Ronchese, F.: Dermatitis Vaccinia (Kaposi's Varicelliform Eruption), Arch. Dermat. & Syph. **47:** 613 (May) 1943.

[6] *Barton, R. L., and Brunsting, L. A.: Kaposi's Varicelliform Eruption:* Review of the Literature and Report of Two Cases of Its Occurrence in Adults, Arch. Dermat. & Syph. **50:** 99 (Aug.) 1944.

[7] Ebert, M. H.: The Herpes Problem, M. Clin. North America, (Chicago Number) **33:** 145, 1949.

[8] Private patient of Dr. Richard Smith.

the extensor surfaces of the arms and the anterior aspects of both thighs. These lesions were confluent over large areas. The patient's temperature was 104.8 F. He was drowsy, listless and prostrated. His eyes were swollen shut, and he had a photophobia. There was also a generalized lymphadenopathy, with some of the axillary and inguinal lymph nodes measuring as much as 3 cm. in diameter. These lymph nodes were extremely tender and somewhat warm. The white blood cell count was 13,750; this gradually rose during the next ten days to a peak of 34,000. Biopsy of a vesicle taken from the thigh on the fourth day of illness was histologically typical of a vaccinia or smallpox lesion, including reticulating colliquation, balloon cells and Guarnieri's bodies in the cells of the stratum mucosum. Reaction to Paul's test was positive for the vaccinia virus. The fluid in many of the vesicles was entirely clear. Paschen bodies were not identified in smears, and few bacterial contaminants were present.

The child was treated locally with application of boric acid compresses and systemically by administration of penicillin, 20,000 units each four hours for the first two hospital days. On the evening of the second hospital day penicillin therapy was discontinued and aureomycin was given in doses of 250 mg. each six hours. Recession and drying of the vesicles were noted within twenty-four hours, and within forty-eight hours the temperature began to fall rapidly. It was normal within a period of twenty-four hours. The child's general condition improved greatly. The dosage of aureomycin was reduced to 500 mg. per twenty-four hours on the fifth hospital day, and the patient was discharged, apparently well, on the eleventh hospital day. Most of the crusts had disappeared, and there was little scarring.

The rapid recovery of this patient, with the immediate regression and desiccation of the skin lesions, suggested to us that aureomycin may be of special therapeutic value in cases of eczema vaccinatum, generalized vaccinia and possibly smallpox. The mode of action of the aureomycin may be one of controlling secondary infection, or the drug may exert some specific antibiotic action on the virus.

Council on Physical Medicine and Rehabilitation

REPORTS OF THE COUNCIL

The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.

Howard A. Carter, *Secretary.*

CHESTPIRATOR PORTABLE CHEST RESPIRATOR ACCEPTABLE

Manufacturer: Fabrikators, Inc., of Mass., 19 Walnut Street, Boston 32.

The Chestpirator Portable Chest Respirator is a device for administering artificial respiration in cases of diaphragmatic or intercostal paralysis by the alternating application of negative and positive pressures to the patient's thorax and abdomen.

The weight of the apparatus is given by the firm as 43 Kg. (95 pounds); the shipping weight, foreign and domestic, is 89 Kg. (198 pounds). The apparatus is packed in two containers, one measuring 70 by 61 by 64 cm. (27½ by 24 by 25½ inches) and the other 62 by 57 by 46 cm. (25 by 22½ by 18 inches). A variety of motors can be supplied to work on 110-115 volt alternating current, or 110-115 volt direct current or 24 volt storage battery source.

Evidence was obtained by the Council that the device worked as claimed by the manufacturer and satisfied the published list of minimum requirements for acceptance of respirators of the cuirass type.

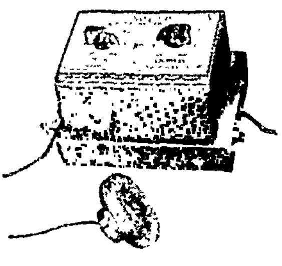
The Council on Physical Medicine and Rehabilitation voted to include the Chestpirator Portable Chest Respirator in its list of accepted devices.

SONOTONE PROFESSIONAL TABLE SET MODEL 50 HEARING AID ACCEPTABLE

Manufacturer: Sonotone Corporation, Elmsford, N. Y.

The Sonotone Professional Table Set Model 50 Hearing Aid is designed to be placed on a desk at which physician and patient are seated, the head piece being worn by the hard of hearing patient with whom the physician wishes to converse. The cords are long enough (183 cm., or 6 feet) to allow freedom of movement for the patient and also to reduce the probability of squeal. It weighs 1.36 Kg. (3 pounds) equipped with a single receiver and 1.59 Kg. (3 pounds 8 ounces) equipped with a double head set and head band. The shipping weight is 4.5 Kg. (10 pounds).

It operates on 110 volt current, either direct or alternating. The main instrument is a metal box bearing two control knobs on top and switch handle and cord outlets at the ends; without these protuberances, the box measures 16.5 by 11.4 by 11.4 cm. (6.5 by 4.5 by 4.5 inches). The upper part of the front and back of the instrument are open work, and within can be seen the microphone and vacuum tubes. The vacuum tubes are removable, and there is a pilot light. A complete wiring diagram is pasted on the inside of the removable bottom.



Sonotone Professional Table Set Model 50 Hearing Aid

One dial-type switch on top is labeled "Pitch"; the other is on-off and control of loudness. The switch at the end close to the entrance of the power cord has two positions, "Normal" and "Hi-Cut."

Three receiver units are available. One is a miniature receiver for attachment to a conventional insert ear mold. This receiver is labeled R-30-U. Another is a single, over the ear, ANB-H-1 receiver mounted in a head band labeled HB-7. A small rubber pad serves for counter pressure on the opposite side of the head. The third unit is a pair of similar ANB-H-1 receivers mounted in a similar head band. The receivers have rubber cushions for snug application against the ear. The receiver cords are fabric covered, about 6 feet long, and connect to the main instrument with a large plug.

The "Hi-Cut" switch introduces high frequency suppression that becomes perceptible at 1,000 cycles and amounts to 10 decibels at 3,000 cycles. The extreme low tone position of the variable pitch control introduces low tone suppression that begins at about 1,500 cycles, amounts to 10 decibels at 600 cycles and rises to 20 decibels at 380 cycles.

Users should realize that the maximum output of this instrument with the large receivers is high enough to reach the threshold of pain in some subjects. Such excessive output can usually be avoided, of course, by careful handling of the loudness control, but the patient is not protected against the effect of a sudden loud input, such as the sound of a hard object dropped on the desk on which the instrument rests. Also, the instrument is sensitive to mechanical contact with the box; papers or other objects tossed against the box might prove disconcerting or uncomfortable.

The specimen submitted by the manufacturer was tested thoroughly in a laboratory acceptable to the Council, and evidence was obtained that the instrument was well designed for its purpose and performed in a satisfactory manner. The Council on Physical Medicine and Rehabilitation voted to include the Sonotone Professional Table Set Model 50 Hearing Aid in its list of accepted devices.

THE CLINICAL SESSION

AMERICAN MEDICAL ASSOCIATION

WASHINGTON, D. C., DEC. 6-9, 1949

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The clinical session of the American Medical Association will be held in Washington, D. C., Dec. 6-9, 1949.

The House of Delegates will convene at 10 a. m., Tuesday, December 6. In the House the representation of the various constituent associations for the clinical session in 1949 is as follows:

Alabama	2
Arizona	1
Arkansas	2
California	10
Colorado	2
Connecticut	3
Delaware	1
District of Columbia	2
Florida	2
Georgia	3
Idaho	1
Illinois	10
Indiana	4
Iowa	3
Kansas	2
Kentucky	2
Louisiana	2
Maine	1
Maryland	2
Massachusetts	7
Michigan	5
Minnesota	4
Mississippi	2
Missouri	4
Montana	1
Nebraska	2
Nevada	1
New Hampshire	1
New Jersey	5
New Mexico	1
New York	23
North Carolina	3
North Dakota	1
Ohio	8
Oklahoma	2
Oregon	2
Pennsylvania	11
Rhode Island	1
South Carolina	2
South Dakota	1
Tennessee	3
Texas	7
Utah	1
Vermont	1
Virginia	3
Washington	3
West Virginia	2
Wisconsin	3
Wyoming	1
Alaska	1
Hawaii	1
Isthmian Canal Zone	1
Puerto Rico	1

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Public Health Service, and the Veterans Administration are entitled to one delegate each.

The Scientific Program will open Tuesday, December 6, starting at 2 p. m., and will continue throughout the afternoon of that day. The program will continue on Wednesday and Thursday mornings and afternoons, December 7 and 8, and on Friday morning, December 9, closing at 12 noon. The gold medal for an outstanding general practitioner will be presented on Tuesday afternoon at the close of the meeting of the House of Delegates and will be followed by a social hour.

The Registration Bureau, which will be located in the National Guard Armory, will be open from 8:30 a. m. until 5:30 p. m., Tuesday, Wednesday and Thursday, December 6-8, and from 8:30 a. m. to 12:00 noon, Friday, December 9.

Ernest E. Irons, President.
F. F. Borzell, Speaker, House of Delegates.
George F. Lull, Secretary.

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Committee on Scientific Exhibit—E. J. McCormick, Toledo, Ohio; Dwight H. Murray, Chairman, Napa, Calif.; F. J. L. Blasingame, Wharton, Texas; Thomas G. Hull, Director, Chicago; Advisory Committee—Howard F. Root, Boston; Paul J. Hanzlik, San Francisco; Ludvig Hektoen, Chicago; Urban Maes, New Orleans; H. J. Corper, Denver, Colo.; James P. Leake, Washington, D. C.

REGISTRATION

The Bureau of Registration will be located in the National Guard Armory. An information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Member and Service Fellows, Affiliate, Associate and Honorary Fellows, members, qualified physicians who apply for Fellowship, medical students of approved medical schools who are certified to the Secretary of the Association by their respective deans, or interns or residents who are graduates of approved medical schools who are certified to the Secretary of the Association by the superintendents of their respective hospitals, and Invited Guests may register for the Scientific Assembly. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their 1949 Fellowship dues. Fellowship cards are sent to all Fellows after payment of annual dues and these cards should be presented at the registration window. Any who have not received cards for 1949 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago 10.

Members in Good Standing Eligible to Apply for Fellowship in the Association

Members in good standing in the American Medical Association are those members of component county medical societies and of constituent state and territorial medical associations whose names are officially reported for enrolment to the Secretary of the American Medical Association by the secretaries of the constituent medical associations. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to Washington.

Application forms may be had on request.

Those subscribers to THE JOURNAL who have not received pocket cards for 1949 should write to the American Medical Association in order to obtain application blanks and information as to further requirements.

Register Early

Fellows living in Washington as well as all other Fellows who are in Washington on Tuesday and Wednesday should register as early as possible.

The names and local addresses of those who register will be included in the issue of the *Daily Bulletin* appearing the next day, and this will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the registration card. Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the registration card and sign the application on the back. These cards will be found on the tables.

Entries on the registration card should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin,* which appears on Wednesday, Thursday and Friday mornings during the week of the session.

Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with the pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it and supply the Fellow with a badge and a copy of the official program.

Those Fellows who have sent in their registration card previous to the session should present at any window the identification card sent them after they registered prior to the session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago 10.

It will be possible for members of the organization to qualify as Fellows at Washington. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the registration card and to sign the formal application that is printed on the reverse side of the card. It is suggested that those members who apply for Fellowship at Washington bring with them their state membership cards for the year 1949. The state membership card should be presented along with the filled in registration card at the window in the booth marked "Applicants for Fellowship and Invited Guests."

As already stated, registration can be effected more easily and more promptly if members will qualify as Fellows before leaving home.

Registration for General Officers and Delegates

General officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly outside the Presidential Ballroom on the second floor of the Hotel Statler on Tuesday, December 6, before registering with the Reference Committee on Credentials and are advised *not* to register at the Registration Bureau since registration cards have already been made out for their use. It will also be possible for them to register on Sunday, December 4, or Monday, December 5, in the office of the Secretary of the Association, in the Continental Room, Hotel Statler.

This arrangement is made for the convenience of members of the House of Delegates, which will convene on Tuesday morning at 10 o'clock in the Presidential Ballroom, Hotel Statler. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

TRANSPORTATION

Bus Service Between Washington Hotel Center and National Guard Armory

Arrangements have been made with the Washington Public Utility Commission to have quick and frequent special bus service between the hotels and the National Guard Armory.

The buses will run at every five minute frequency between 8:45 and 9:45 a. m. Between 9:45 and 4:00 p. m. buses will leave every half-hour. In the evening when the meeting is over between 4:00 p. m. and 6:00 p. m. the buses will leave the National Guard Armory every five minutes.

The fare for one way service will be only 25 cents. The average length of the trip will be 15 minutes and it offers quite economical transportation for all those attending the meeting.

Railroad or Air Travel

It is suggested that those Fellows who contemplate traveling to Washington to attend the clinical session of the Association secure information concerning railroad and airplane travel directly from their local ticket agents, who are in a position to give them information regarding train or plane schedules and fares.

WASHINGTON HOTELS

It is suggested that if hotel reservations have not yet been secured by Fellows who expect to attend the Washington session, such Fellows fill in and send directly to the Chairman of the SUBCOMMITTEE ON HOTELS, Hotel Reservation Bureau, Star Building, Washington 4, D. C., the application form which may be found in the advertising pages of this JOURNAL.

MEETING PLACES

House of Delegates: Presidential Ballroom, Hotel Statler.

Scientific Meetings: National Guard Armory.

Presentation of General Practitioner's Medal: Presidential Ballroom, Hotel Statler.

General Headquarters, Registration Bureau, Scientific Exhibit, Technical Exhibits and Information Bureau: National Guard Armory.

Wednesday evening entertainment in Presidential Ballroom, Hotel Statler.

The National Guard Armory is located at 2001 E. Capitol N. W.

LOCAL COMMITTEE ON ARRANGEMENTS

ADMINISTRATIVE COMMITTEES

Oscar B. Hunter, Chairman
W. Ross Morris, Co-Chairman
Mr. Theodore Wiprud, Secretary

John Minor
William M. Ballinger
Walter J. Freeman
Coursen B. Conklin
Herbert P. Ramsey

Advisory Committee

Walter J. Freeman, Chairman
John Minor, Co-Chairman

Winfred Overholser
Walter A. Bloedorn
Thomas McPherson Brown
Paul H. Streit
C. A. Swanson
F. C. Greaves
Leonard A. Scheele
Harold Jeghers
Paul A. McNally, S. J.
R. W. Bliss
Raymond O. Dart
M. D. Willcutts
Harry G. Armstrong
Paul B. Magnuson

Subcommittee on Hotels

Robert J. Coffey, Chairman

James Nolan
Philip Caulfield
Charles P. Ryland

Subcommittee on Transportation

Stanley W. Kirstein, Chairman

Wallace S. McCune
Saul Zuckerman
George Tievsky

Subcommittee on Information and Registration

Robert H. Groh, Chairman
William J. Tobin, Vice-Chairman

Alfred A. J. Den
Harvey F. Kreuzberg
Luther H. Snyder
Walter H. Gerwig
John C. Sullivan
Joseph A. Bailey

Subcommittee on General Meeting

R. Lomax Wells, Chairman
Victor R. Alfaro, Co-Chairman

J. Ogle Warfield
John U. Schwarzmann

Subcommittee on Women Physicians

H. Gladys Kain, Chairman

Margaret M. Nicholson
Alma J. Speer

Subcommittee on Program

J. Ross Veal, Chairman
H. H. Hussey, Co-Chairman
R. L. Sexton, Co-Chairman, Television

Subcommittee on Exhibits

A. Magruder MacDonald, Chairman
Herbert S. Gates, Co-Chairman

HOUSE OF DELEGATES

The House of Delegates will meet at 10 a. m., Tuesday, Dec. 6, 1949, in the Presidential Ballroom, Hotel Statler.

The Reference Committee on Credentials will meet in the foyer outside the Ballroom at 8:30 a. m., Tuesday, Dec. 6, 1949. Credentials should be presented to the Reference Committee on Credentials as early as possible, so that the official roll of the House may be made up and so that the House of Delegates may organize promptly and proceed with its business. The Reference Committee on Credentials will also meet preceding each subsequent meeting of the House of Delegates.

Each delegate should present properly executed credentials signed by the president and the secretary of the constituent association or by the chairman and the secretary of the section he represents. Alternates presenting credentials should see that the delegates whose places they are to take have signed the alternate authorization.

Each delegate, before registering with the Reference Committee on Credentials, should register for the Scientific Assembly at a booth located near the Ballroom.

Rooms have been provided for the use of committees of the House of Delegates. Reference committees are urged to have their meetings in these rooms and to announce the time of their meetings, so that any who are interested in matters referred may be able to appear before the committees.

Typists will be at the service of the members of the House of Delegates for preparing official reports, resolutions and motions.

There should be eight copies of all resolutions, written motions, etc., presented in the House, one copy for preservation in the minutes, six to go to the committee to which the matter may be referred and one to be used as "copy" for the Proceedings. There should be four copies of all reference committee reports. The eight copies or the four copies as the case may be must be handed to the Secretary at the time the matter is presented. Typists in attendance will gladly make these copies on request.

MEETING ROOMS OF REFERENCE COMMITTEES

Reference Committee on—

Amendments to the Constitution and By-Laws....Southwest quarter of Congressional Room
Hygiene and Public Health.....Northwest quarter of Congressional Room
Industrial Health.....Southwest quarter of Federal Room
Legislation and Public Relations..........Northeast quarter of Federal Room
Medical Education.........................District Room

Miscellaneous Business	Southeast quarter of Federal Room
Reports of Board of Trustees and Secretary	Town Room
Reports of Officers	Southeast quarter of Congressional Room
Rules and Order of Business	Northeast quarter of Congressional Room
Sections and Section Work	Northwest quarter of Federal Room
Executive Session	Capital Room
Special	South American Room

MEMBERS OF HOUSE OF DELEGATES, CLINICAL SESSION, 1949

The following is a list of members of the House of Delegates:

Alabama—2

Lloyd Noland	Fairfield
Carl A. Grote	Huntsville

Arizona—1

Jesse D. Hamer	Phoenix

Arkansas—2

William R. Brooksher	Fort Smith
Rufus B. Robins	Camden

California—10

Robertson Ward	San Francisco
Samuel J. McClendon	San Diego
Lowell S. Goin	Los Angeles
John W. Green	Vallejo
H. Gordon MacLean	Oakland
E. Vincent Askey	Los Angeles
John W. Cline	San Francisco
Donald Cass	Los Angeles
Ralph B. Eusden	Long Beach
Lewis A. Alesen	Los Angeles

Colorado—2

George A. Unfug	Pueblo
William H. Halley	Denver

Connecticut—3

Thomas P. Murdock	Meriden
Joseph H. Howard	Bridgeport
Creighton Barker	New Haven

Delaware—1

James Beebe	Lewes

District of Columbia—2

C. B. Conklin	Washington
Herbert P. Ramsey	Washington

Florida—2

Louis M. Orr II	Orlando
Homer Lee Pearson Jr	Miami

Georgia—3

Allen H. Bunce	Atlanta
Cyrus K. Sharp	Arlington
Benjamin H. Minchew	Waycross

Idaho—1

Hoyt B. Woolley	Idaho Falls

Illinois—10

Rollo K. Packard	Chicago
Charles H. Phifer	Chicago
G. Henry Mundt	Chicago
Bernard Klein	Joliet
Willis I. Lewis	Herrin
Robert H. Hayes	Chicago
Fred H. Muller	Chicago
Mather Pfeiffenberger	Alton
E. H. Weld	Rockford
Everett P. Coleman	Canton

Indiana—4

William M. Cockrum	Evansville
F. S. Crockett	Lafayette
H. G. Hamer	Indianapolis
A. S. Giordano	South Bend

Iowa—3

George Braunlich	Davenport
Donald C. Conzett	Dubuque
Gerald V. Caughlan	Council Bluffs

Kansas—2

John M. Porter	Concordia
Philip W. Morgan	Emporia

Kentucky—2

Clark Bailey	Harlan
J. B. Lukins	Louisville

Louisiana—2

James Q. Graves	Monroe
Val H. Fuchs	New Orleans

Maine—1

Thomas A. Foster	Portland

Maryland—2

Jacob W. Bird	Sandy Spring
Warde B. Allan	Baltimore

Massachusetts—7

Charles J Kickham	Brookline
L. S. McKittrick	Brookline
Patrick J. Sullivan	Dalton
John J. Curley	Leominster
Walter G. Phippen	Salem
Frank W. Snow	Newburyport
Earle M. Chapman	Boston

Michigan—5

L. G. Christian	Lansing
William A. Hyland	Grand Rapids
Wyman D. Barrett	Detroit
R. L. Novy	Detroit
Willis H. Huron	Iron Mountain

Minnesota—4

E. W. Hansen	Minneapolis
Francis J. Savage	St. Paul
W. A. Coventry	Duluth
J. Arnold Bargen	Rochester

Mississippi—2

James P. Wall	Jackson
Felix J. Underwood	Jackson

Missouri—4

Howard B. Goodrich	Hannibal
Warren L. Allee	Eldon
Robert E. Schlueter	St. Louis
James R. McVay	Kansas City

Montana—1

Raymond F. Peterson	Butte

Nebraska—2

Karl S. J. Hohlen	Lincoln
Joseph D. McCarthy	Omaha

Nevada—1

Roland W. Stahr	Reno

New Hampshire—1

Deering G. Smith	Nashua

New Jersey—5

Joseph F. Londrigan	Hoboken
William F. Costello	Dover
J. Wallace Hurff	Newark
David B. Allman	Atlantic City
Elmer P. Weigel	Plainfield

New Mexico—1

John F. Conway	Clovis

NEW YORK—23

John J. Masterson	Brooklyn
J. Stanley Kenney	New York
Thomas A. McGoldrick	Brooklyn
Andrew A. Eggston	Mount Vernon
Peter J. DiNatale	Batavia
George W. Kosmak	New York
Stephen R. Monteith	Nyack
Joseph P. Henry	Rochester
S. L. Smith	Poughkeepsie
Thomas M. D'Angelo	Flushing
Walter P. Anderton	New York
Albert F. R. Andresen	Brooklyn
James R. Reuling Jr	Bayside
Floyd S. Winslow	Rochester
Herbert H. Bauckus	Buffalo
Thomas M. Brennan	Brooklyn
Ralph T. B. Todd	Tarrytown
William B. Rawls	New York
Edward P. Flood	New York
Leo F. Schiff	Plattsburg
W. Guernsey Frey Jr	New York
B. Wallace Hamilton	New York
Clarence G. Bandler	New York

NORTH CAROLINA—3

R. D. McMillan	Red Springs
C. F. Strosnider	Goldsboro
G. Grady Dixon	Ayden

NORTH DAKOTA—1

John H. Moore	Grand Forks

OHIO—8

L. Howard Schriver	Cincinnati
Clifford C. Sherburne	Columbus
Frank M. Wiseley	Findlay
Herbert B. Wright	Cleveland
Carl A. Lincke	Carrollton
George A. Woodhouse	Pleasant Hill
William M. Skipp	Youngstown
Arthur A. Brindley	Toledo

OKLAHOMA—2

Charles R. Rountree	Oklahoma City
James Stevenson	Tulsa

OREGON—2

Edward H. McLean	Oregon City
Raymond M. McKeown	Coos Bay

PENNSYLVANIA—11

William L. Estes Jr	Bethlehem
James L. Whitehill	Rochester
George S. Klump	Williamsport
Elmer Hess	Erie
James Z. Appel	Lancaster
E. Roger Samuel	Mount Carmel
William Bates	Philadelphia
Francis F. Borzell	Philadelphia
Harold B. Gardner	Pittsburgh
Charles L. Shafer	Kingston
Howard K. Petry	Harrisburg

RHODE ISLAND—1

Charles L. Farrell	Pawtucket

SOUTH CAROLINA—2

Hugh P. Smith	Greenville
Julian P. Price	Florence

SOUTH DAKOTA—1

H. Russell Brown	Watertown

TENNESSEE—3

H. B. Everett	Memphis
Robert B. Wood	Knoxville
Charles M. Hamilton	Nashville

TEXAS—7

A. C. Scott Jr	Temple
B. E. Pickett Sr	Carrizo Springs
E. H. Cary	Dallas
John K. Glen	Houston
Harold M. Williams	Austin
Robert B. Homan Jr	El Paso
Joseph B. Copeland	San Antonio

UTAH—1

James P. Kerby	Salt Lake City

VERMONT—1

Paul K. French	Burlington

VIRGINIA—3

Henry B. Mulholland	Charlottesville
J. Morrison Hutcheson	Richmond
John M. Emmett	Clifton Forge

WASHINGTON—3

Ross D. Wright	Tacoma
Raymond L. Zech	Seattle
Donald G. Corbett	Spokane

WEST VIRGINIA—2

Ivan Fawcett	Wheeling
Walter E. Vest	Huntington

WISCONSIN—3

William D. Stovall	Madison
Stephen E. Gavin	Fond du Lac
James C. Sargent	Milwaukee

WYOMING—1

Roscoe H. Reeve	Casper

ALASKA—1

Paul B. Haggland	Fairbanks

HAWAII—1

Forrest J. Pinkerton	Honolulu

ISTHMIAN CANAL ZONE—1

George R. Wright	Ancon

PUERTO RICO—1

Carlos E. Munoz-MacCormick	Santurce

DELEGATES FOR SECTIONS

INTERNAL MEDICINE

Charles T. Stone	Galveston, Texas

SURGERY, GENERAL AND ABDOMINAL

Grover C. Penberthy	Detroit

OBSTETRICS AND GYNECOLOGY

Jean Paul Pratt	Detroit

OPHTHALMOLOGY

William L. Benedict	Rochester, Minn.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Gordon F. Harkness	Davenport, Iowa

PEDIATRICS

William Weston	Columbia, S. C.

EXPERIMENTAL MEDICINE AND THERAPEUTICS

Charles M. Gruber	Philadelphia

PATHOLOGY AND PHYSIOLOGY

L. W. Larson	Bismarck, N. D.

NERVOUS AND MENTAL DISEASES

Hans H. F. Reese	Madison, Wis.

DERMATOLOGY AND SYPHILOLOGY

Everett C. Fox	Dallas, Texas

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
Stanley H. Osborn........................Hartford, Conn.

UROLOGY
J. J. Crane..................................Los Angeles

ORTHOPEDIC SURGERY
Edward L. Compere............................Chicago

GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis A. Buie.........................Rochester, Minn.

RADIOLOGY
B. R. Kirklin..........................Rochester, Minn.

ANESTHESIOLOGY
Edward B. Tuohy.....................Washington, D. C.

GENERAL PRACTICE
Paul A. Davis..............................Akron, Ohio

GOVERNMENT SERVICES

United States Army....................George E. Armstrong
United States Navy...........................Joel T. Boone
United States Public Health Service......W. Palmer Dearing
Veterans Administration......................E. H. Cushing

PERSONNEL OF REFERENCE COMMITTEES FOR THE WASHINGTON SESSION

SECTIONS AND SECTION WORK

William Weston, Chairman, Section on Pediatrics
Hans F. Reese, Section on Nervous and Mental Diseases
Jean Paul Pratt, Section on Obstetrics and Gynecology
Paul A. Davis, Section on General Practice
Gordon F. Harkness, Section on Laryngology, Otology and Rhinology

RULES AND ORDER OF BUSINESS

James Beebe, Chairman, Delaware
Jesse D. Hamer, Arizona
Peter J. DiNatale, New York
Clifford Sherburne, Ohio
James Stevenson, Oklahoma

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Creighton Barker, Chairman, Connecticut
Willis I. Lewis, Illinois
Thomas A. McGoldrick, New York
John W. Green, California
Arthur C. Scott, Jr., Texas

MEDICAL EDUCATION

Grover C. Pemberthy, Chairman, Section on Surgery, General and Abdominal
Charles L. Shafer, Pennsylvania
Henry B. Mulholland, Virginia
Ralph Todd, New York
Charles J. Kickham, Massachusetts

LEGISLATION AND PUBLIC RELATIONS

Howard Petry, Chairman, Pennsylvania
Rufus B. Robins, Arkansas
Samuel J. McClendon, California
Cyrus K. Sharp, Georgia
Clark Bailey, Kentucky

HYGIENE AND PUBLIC HEALTH

Stanley H. Osborn, Chairman, Section on Preventive and Industrial Medicine and Public Health
W. Palmer Dearing, U. S. Public Health Service
William A. Coventry, Minnesota
Robert E. Schleuter, Missouri
Frank M. Wiseley, Ohio

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Floyd S. Winslow, Chairman, New York
B. E. Pickett, Sr., Texas
Karl S. J. Hohlen, Nebraska
Alfred S. Giordano, Indiana
H. Russell Brown, South Dakota

REPORTS OF OFFICERS

Charles H. Phifer, Chairman, Illinois
Harold B. Gardner, Pennsylvania
Robert B. Homan Jr., Texas
Allen H. Bunce, Georgia
Robertson Ward, California

CREDENTIALS

Hiram B. Everett, Chairman, Tennessee
Edward P. Flood, New York
Carl A. Lincke, Ohio
John F. Conway, New Mexico
G. Grady Dixon, North Carolina

INDUSTRIAL HEALTH

Donald Cass, Chairman, California
Homer L. Pearson Jr., Florida
Willis H. Huron, Michigan
Walter E. Vest, West Virginia
Earle M. Chapman, Massachusetts

EXECUTIVE SESSION

James P. Wall, Chairman, Mississippi
David B. Allman, New Jersey
Stephen R. Monteith, New York
Deering G. Smith, New Hampshire
Charles F. Strosnider, North Carolina

MISCELLANEOUS BUSINESS

L. S. McKittrick, Chairman, Massachusetts
George A. Unfug, Colorado
Bernard Klein, Illinois
Val H. Fuchs, Louisiana
Raymond F. Peterson, Montana

ORDER OF BUSINESS

(Subject to change by action of the House of Delegates)

TUESDAY, DECEMBER 6, 10 A. M.

1. Call to Order by the Speaker.
2. Preliminary Report of the Reference Committee on Credentials.
3. Roll Call.
4. Selection of Recipient of General Practitioner's Award.
5. Presentation, Correction and Adoption of Minutes of the Annual Session held in June, 1949.
6. Speaker's Remarks and Confirmation of Appointments to Reference Committees.
7. Address of President.
8. Introduction of President-Elect.
9. Report of Secretary.
10. Report of Board of Trustees, including reports of:
    (a) Council on Pharmacy and Chemistry.
    (b) Council on Physical Medicine and Rehabilitation.
    (c) Council on Foods and Nutrition.
    (d) Council on Industrial Health.
    (e) Council on National Emergency Medical Service.
    (f) Bureau of Health Education.
    (g) Bureau of Investigation.
    (h) Bureau of Legal Medicine and Legislation.
    (i) Bureau of Medical Economic Research.
    (j) Bureau of Exhibits.
    (See By-laws, Division Three, Chap. IX, Sec. 2 [B])

11. Reports of Standing and Special Committees:
    (1) Judicial Council.
    (2) Council on Medical Education and Hospitals.
    (3) Council on Scientific Assembly.
    (4) Council on Medical Service.
    (5) Special Committees.
12. Unfinished Business.
13. New Business.
14. Reports of Reference Committees.

2:30 P. M.

Time for introduction in executive session of resolutions dealing with private affairs of the Association.

THURSDAY, DECEMBER 8, 1:15 P. M.

1. Supplementary Report of Reference Committee on Credentials.
2. Reading and Adoption of Minutes.
3. New Business.
4. Executive Session.
5. Reports of Reference Committees and Other Unfinished Business.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The Secretary respectfully submits the following annual report:

Membership and Fellowship

On Sept. 1, 1949, the membership roster of the American Medical Association carried the names of 145,036 physicians, an increase of practically 5,000 members over the preceding year when the membership numbered 140,260, and an increase of nearly 10,000 over the membership on the same date in 1947. The Secretary submits that this really amazing growth in the short span of three years is indicative of the growing confidence of the rank and file of the medical profession of this country in the American Medical Association. It also reflects the agreement of the profession at large with the policies and efforts of the Association to preserve and defend the American way of free enterprise.

The number of Fellows of the Association has also shown a gratifying increase. There were 81,053 names on the Fellowship roster on Sept. 1, 1949, as compared with 77,816 on the same date in 1948 and 75,424 in 1947. Some of the increase in 1949 is accounted for by the inclusion of a few more than 2,000 names of physicians of the Veterans Administration who have been made Service Fellows in accordance with the recent amendment to the Constitution and By-Laws. In this connection, members of the House of Delegates may be interested to know that there are 6,765 Service Fellows, who are either commissioned medical officers of the United States Army, the United States Navy and the Public Health Service or permanent medical officers of the Veterans Administration.

The accompanying table shows the count of members and Fellows in the various states and territories and the number of component societies in each state.

Action on Mandates of House of Delegates

Actions of the House of Delegates at the Atlantic City Session in June which called for reference or correspondence by the Secretary have been taken care of as follows:

Amendments to the Constitution and By-Laws: The House of Delegates approved an amendment to the By-Laws, Division Three, Chapter XII, Section 6 (*A*) whereby the section was made to read ". . . the Secretary shall (*A*) keep minutes of the Proceedings of the House of Delegates, of the Judicial Council and of the Council on Scientific Assembly." The Secretary respectfully submits that the original wording of this portion of the By-Laws, namely "Keep minutes of the Proceedings of the House of Delegates and of the meetings of the Scientific Assembly" was correct in that the keeping

Organization of Constituent State and Territorial Medical Associations, Oct. 1, 1949

	Number of Counties in State	Number of Component Societies in State	No. of Counties in State Not Organized		No. of Members of State Associations		Number of Fellows in State, 1949
			1948	1949	1948	1949	
Alabama	67	67	..	..	1,623	1,738	722
Arizona	14	14	..	..	478	576	340
Arkansas	75	60	9	8	1,149	1,228	437
California	58	40	9	8	9,223	10,529	5,369
Colorado	63	27	1	1	1,373	1,422	777
Connecticut	8	8	..	..	2,348	2,496	1,449
Delaware	3	3	..	..	259	279	163
District of Columbia	..	..	..	..	1,218	1,384	810
Florida	67	33	16	17	1,775	1,693	1,159
Georgia	159	90	37	39	1,997	2,345	814
Idaho	44	9	..	1	322	394	150
Illinois	102	92	6	6	9,415	9,744	5,065
Indiana	92	81	1	1	3,777	3,771	1,753
Iowa	99	97	..	..	2,312	2,404	1,232
Kansas	105	74	15	15	1,594	1,641	908
Kentucky	120	108	3	4	1,954	1,992	877
Louisiana	64	42	17	15	1,767	1,808	883
Maine	16	15	..	..	754	793	368
Maryland	23	23	..	..	1,983	2,196	1,224
Massachusetts	13	18	..	..	6,107	6,405	3,207
Michigan	85	55	..	2	4,751	4,979	2,694
Minnesota	87	35	1	..	3,151	3,343	1,498
Mississippi	82	27	3	3	1,053	1,035	345
Missouri	114	74	7	9	3,564	3,683	1,771
Montana	56	18	21	20	431	471	250
Nebraska	93	50	16	16	1,163	1,173	744
Nevada	17	5	12	12	171	177	102
New Hampshire	10	10	..	..	566	600	313
New Jersey	21	21	..	..	4,825	5,300	3,618
New Mexico	31	14	17	17	285	327	203
New York	62	61	1	1	21,717	22,264	11,168
North Carolina	100	67	24	24	2,280	2,331	1,105
North Dakota	53	13	11	11	328	376	184
Ohio	88	88	1	..	7,214	7,373	4,003
Oklahoma	77	57	6	6	1,545	1,616	726
Oregon	36	27	1	1	1,210	1,339	649
Pennsylvania	67	60	5	7	10,750	11,038	6,981
Rhode Island	5	7	1	..	838	858	405
South Carolina	46	36	4	5	1,030	1,133	437
South Dakota	69	13	1	..	333	378	155
Tennessee	95	51	23	25	1,913	2,012	1,106
Texas	254	125	..	1	5,679	6,365	2,130
Utah	29	8	4	5	591	649	351
Vermont	14	10	3	3	398	414	225
Virginia	100	50	8	9	2,036	2,068	1,332
Washington	39	25	13	12	1,854	2,051	941
West Virginia	55	29	5	5	1,482	1,401	764
Wisconsin	71	52	..	..	2,854	2,913	1,441
Wyoming	24	11	11	11	184	201	129
Alaska	..	..	..	..	43	46	20
Hawaii	5	4	1	1	369	411	149
Isthmian Canal Zone	..	..	..	..	69	151	30
Philippine Islands	..	..	..	..	......	.....	3
Puerto Rico	7	7	..	..	563	590	189
Foreign	..	..	..	..	......	.....	169
Total	3,084	2,011	314	321	136,668	144,177	74,337
						Service Fellows	6,765
							81,102

of the minutes of the meetings of the Scientific Assembly covered the section meetings and other scientific meetings rather than merely the meetings of the Council on Scientific Assembly. It is recommended, therefore, that the House of Delegates take action to restore Division Three, Chapter XII, Section 6 (*A*) to its original wording.

The foregoing amendment and the other amendments to the By-Laws which were adopted at the Atlantic City Session have been incorporated in the Constitution and By-Laws that have been printed since the 1949 annual session.

Resolution on Child Health Programs on the State and Local Level: The attention of each constituent association was called by means of letters to the respective secretaries to this resolution, which favored "the development of sound child health programs on the state and local level by pediatric groups working in cooperation with the several state medical associations and local component county societies."

Resolution on the Confidential Nature of Birth Records: These resolutions recommending that state legislatures and registration officials be urged to study carefully the publication entitled "The Confidential Nature of Birth Records" and, wherever possible, to put the recommendations contained therein into effect by enactment of laws or by administrative regulations, have been transmitted to each constituent association.

Resolution on Social Security: A copy of this resolution, which disapproved the extension of "social security" to self-employed individuals, including physicians and surgeons, was sent to each member of the United States Senate and House of Representatives.

Other resolutions were referred, as recommended in the reports of reference committees adopted by the House of Delegates, to the Council on Medical Education and Hospitals, the Judicial Council, the Council on Medical Service, the Council on National Emergency Medical Service and the Board of Trustees and undoubtedly will be reported on by those bodies.

ANNUAL CONFERENCE OF STATE SECRETARIES AND EDITORS

The 1948 annual conference of secretaries and editors of state medical associations was held in November in St. Louis prior to the Interim Session. This was the first time in the long history of these conferences that one has been held outside of Chicago. An excellent program, prepared by a committee of members of the conference, was presented and many declared the meeting to be one of the most interesting yet held. However, the Secretary received a number of comments to the effect that the members preferred to come to Association headquarters for this conference, where they have opportunity to acquaint themselves with the work done there and with members of the staff. The 1949 conference is being held in the American Medical Association Building in Chicago.

FIELD ACTIVITY

During the past year the Secretary has responded to an increasing number of invitations to address or attend meetings of state and county medical societies throughout the country and meetings of a large number of other organizations having interests similar or allied to those of the American Medical Association.

The Assistant Secretary has also been increasingly in demand for similar activities.

APPRECIATION

The Secretary wishes to express his sincere appreciation for the aid and many courtesies that have been extended to him in all matters by the officers of the American Medical Association, the members of its House of Delegates, and the officers and members of state and county medical societies, as well as the loyal and efficient staff at the headquarters offices.

Respectfully submitted,

GEORGE F. LULL, *Secretary*.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectfully submitted:

Action on Resolutions or Reports Adopted by House of Delegates at Atlantic City Session

Certain resolutions and reports were referred to the Board of Trustees by the House of Delegates at the Atlantic City Session for consideration and possible action. The following report with respect to these matters is submitted:

Resolution on American Medical Association Assessment and Dues: An *ad hoc* committee on Constitution and By-Laws has been appointed to consider the Resolution on American Medical Association Assessment and Dues and other resolutions and recommend changes in the Constitution and By-Laws in the light of the provisions of the resolutions.

This Committee is now studying the question of permanent membership dues payable to the American Medical Association in view of the probability that the House of Delegates will wish to consider this problem at the December 1949 meeting of the House of Delegates. The final report of the Committee will not be available until just prior to the Clinical Session, but this preliminary report is included in the report of the Board of Trustees for the information of the members of the House in order that the complex questions involved may be noted.

At whatever level dues may be set, the chief problem is the technic of collecting them, whether directly by the American Medical Association from the active members or through the constituent medical associations or whether the dues should be collected from each constituent state and territorial medical association in proportion to the active paying membership of that association. The latter method would be consistent with the structure of the American Medical Association and, in addition, would eliminate the problems connected with the direct dues paying technic.

Resolutions on Single Membership Classification: The Committee on Constitution and By-Laws has reported to the Board of Trustees that it would be inadvisable to eliminate the Fellowship classification, which would be the case if the By-Laws were amended to encompass the objectives of these resolutions. The Board of Trustees has accepted the recommendation of the Committee.

Resolution on Questionnaire on Medical Care: It is the opinion of the Board of Trustees that it would be inexpedient at this time to send a questionnaire to all members and Fellows of the Association to learn their attitude relative to the various facets of medical care problems.

Resolution *on Compulsory* Health *Measures:* Copies of this resolution disapproving legislative proposals which would provide free diagnostic and therapeutic care for all school children of the United States were sent, together with the report of the Reference Committee and of the Board of Trustees, to the secretaries of all constituent state and territorial medical associations.

Resolution on Establishment of Committee on General Practice: In accordance with the recommendation contained in this resolution, the following Committee on General Practice, which will report directly to the House of Delegates, has been appointed:

Dr. Stanley R. Truman, Chairman

Dr. Paul A. Davis
Dr. William L. Pressly
Dr. George S. Klump
Dr. Joseph B. Copeland

Resolution on Establishment of Committee to Confer with Congress: This resolution recommended the appointment of a committee of leaders in the medical profession with a view to developing legislation that would meet the objectives of the American Medical Association Program. The appointed committee is comprised of the following members:

Dr. Harvey B. Stone, Chairman
Dr. R. L. Sensenich
Dr. Louis H. Bauer
Dr. R. B. Robins
Dr. John W. Cline
Dr. F. F. Borzell
Dr. James R. McVay
Dr. George F. Lull }
Dr. E. L. Henderson } ex officio
Dr. Frank H. Lahey

Resolution on Hospital and Medical Care of Veterans for Non-Service-Connected Disabilities: The recommendations set forth in this resolution were given careful consideration by the Board of Trustees, and a Committee on Veterans Affairs has been appointed which will serve as a Committee of the Council on Medical Service.

Resolution on Medical Care and Health Plans: This resolution recommended that "the American Medical Association initiate under its own auspices a conference of representatives of all groups, medical and lay, with the purpose of forming a joint planning committee for the preparation of a truly comprehensive plan of curative and preventive medicine for the nation." Three preliminary conferences have been held with persons in high official position in five national organizations in the field of health and welfare and, while it is still too early for the presentation of any official statement from this group, the Board of Trustees is happy to report definite progress.

Resolution on Displaced Physicians and Resolution on Special Committee on Displaced Physicians: These resolutions were somewhat similar in content and one of them, as indicated, called for the appointment of a special committee to study the problems of displaced physicians generally. The membership of the appointed committee is as follows:

Dr. J. J. Moore, Chairman
Dr. Creighton Barker
Dr. Alez M. Burgess
Dr. Ernest B. Howard
Dr. George F. Lull
Dr. Jacob J. Golub

Report of Committee on Hospitals and the Practice of Medicine: Since the Atlantic City Session in June when the Report of the Committee on Hospitals and the Practice of Medicine as revised by the Reference Committee on Reports of Board of Trustees and Secretary was adopted by the House of Delegates, the Board of Trustees has given extended consideration to the positive recommendations made and the specific language in the report. An opinion was obtained from the Association's legal counsel, which reads in part as follows:

> "I know that the said reference committee in presenting said Report and the House of Delegates in adopting it did not have a purpose of restraining, coercing or conspiring against, any hospital or institution, and merely meant to see to it that the members of the American Medical Association abide by the Principles of Medical Ethics of American Medical Association properly and lawfully construed and applied. There is, however, much language in said Report that could be seized upon by a person or party so disposed, in argument to court or jury, that it was the purpose of American Medical Association to unreasonably restrain, coerce or conspire against some particular hospital or institution and not merely to enforce the Principles of Medical Ethics of American Medical Association against the members of American Medical Association in a lawful manner and for a lawful purpose and not for the purpose of coercion or restraint.
>
> ". . . consideration should be given to the repealing by the House of Delegates of the Report of the reference committee of the House of Delegates on the report of Committee on Hospitals and the Practice of Medicine, by virtue of which an amended and revised Report was adopted by the House of Delegates on June 9, 1949."

The Board of Trustees feels that this legal opinion supports its own view that the action of the House of Delegates on the revised Report of the Committee on Hospitals and the Practice of Medicine is illegal and contrary to previous court decisions and also supports the Board's own opinion that to activate the recommendations of the Report would be unwise. The Board of Trustees therefore requests that the House of Delegates rescind at the earliest possible moment its adoption of the Report of the Committee on Hospitals and the Practice of Medicine as contained in the report of the reference committee.

Resolution on General Practice Sections in Hospitals: The following Resolution on General Practice Sections in Hospitals was presented to the House of Delegates in June 1949:

> "*Resolved,* That the House of Delegates of the American Medical Association reaffirm its action of Dec. 10, 1946, concerning general practice sections making this action mandatory for such hospitals, with continued approval contingent on such action. . . ."

The Reference Committee on Miscellaneous Business reported on this resolution, and the report was adopted by the House, as follows:

> "Your committee approves the principle of the resolution but does not believe it should be made mandatory."

Believing the purpose of this action to be of great importance and also believing that certain dangers were inherent in the wording of the resolution, the Board of Trustees requested an opinion from legal counsel as to whether or not this resolution was legally proper under the Constitution and By-Laws. The opinion of the Association's attorney was rendered, in part, as follows:

> "In my opinion the resolution above quoted, if resolved and passed by the House of Delegates without deleting the word 'mandatory' would not have been legally proper."

With this opinion in hand, bearing out its own convictions, the Board of Trustees recommends that the House of Delegates take action at the December 1949 session and rescind the approval of the Resolution on General Practice Sections in Hospitals

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The Journal

The Journal of the American Medical Association continues to mount in circulation, in value as an advertising medium and in readership as a professional medical publication. During 1949 the London correspondent who had held this position for more than forty years died; a new correspondent will be selected to supply a letter each week dealing with the affairs of medicine in Great Britain.

The Scientific Assembly of the American Medical Association has gradually added new sections, so that the number of such sections is almost double the number of twenty-five years ago. Each of these sections includes 20 to 30 papers in its program. Fifteen to 20 papers are also included in the General Meetings at the time of the Annual Session. In addition, a number of papers are read during the Clinical Session of the Association in midwinter. Between 2,000 and 2,500 papers are submitted voluntarily each year to The Journal. Thus it becomes necessary for the editor to read and either to accept or reject about 3,000 manuscripts each year.

Most of the important activities of the councils, bureaus and committees of the American Medical Association are given force and effectiveness through the pages of The Journal. The councils, bureaus and committees have multiplied, so that their number is about four times as many as it was twenty-five years ago.

Notwithstanding continuous increase in the size of The Journal, the publication of all official material has now become impossible. The size of The Journal is governed by the amount of material that can be made available to its readers each week and by the time available to the individual physician for reading and absorption of such material. The standard size of The Journal is 128 pages weekly, but many issues during the year exceed this figure, reaching in special issues as high as 220 pages. About 600 manuscripts can be published annually. Thus at least 2,400 of the manuscripts submitted must be rejected with recommendations to publish in the specialty journals or elsewhere. The solution of this problem is difficult and is being given special consideration by the Board of Trustees.

With the retirement of Dr. Morris Fishbein it is contemplated that Dr. Austin Smith, Director of the Division of Therapy and Research, will become responsible for editing THE JOURNAL.

From Sept. 1, 1948, to Sept. 1, 1949, the weekly average of copies of THE JOURNAL printed was 137,013, which is a little more than 200 less than were printed in the preceding corresponding period. The mailing list of THE JOURNAL contained 136,950 names on Sept. 1, 1948, showing a decrease of 614 subscribers during the past year.

The fact that annual reports are now presented to the House of Delegates at the midwinter sessions necessitates a change in the time at which compilations are made in the subscription and circulation departments, so that it is not possible to present in this report the usual tables showing the approximate count of Fellows and subscribers on THE JOURNAL mailing list and the percentage of physicians receiving THE JOURNAL. That information will be available for the annual report next year.

Special Journals

The nine journals published by the American Medical Association devoted to the various specialties suffered a serious handicap during the recent strike of compositors and printers. As a result publications fell many months behind. Since that time special attention has been given to bringing these periodicals up to date. Much of the printing has been done by printers in Minneapolis and Memphis. When it became apparent that difficulties were developing, an intense drive was made to publish current issues and at the same time to make up the back issues that had been missed. At this time all the special journals are being published currently with the month of their dating. Subscriptions to practically all the special journals published by the American Medical Association have increased approximately 50 per cent during the past five years.

The *Archives of Surgery* has begun to be sought by more and more surgical organizations as an outlet for their transactions. At this time the Western Surgical Association, the Central Surgical Association and the Society of University Surgeons have adopted the *Archives of Surgery* as their official publication. The Board of Trustees therefore has approved a considerable increase in the size of the *Archives of Surgery* to meet this demand.

The *Archives of Internal Medicine* celebrated during 1949 the Centenary of the birth of William Osler. A special issue was published, which attracted worldwide attention.

The subscription prices of the special journals have not been increased over a considerable number of years. Their primary purpose is advancement of the specialties which they represent. Because of rapidly increased costs of labor and difficulty of publication, the Board of Trustees has now established new subscription rates for the special journals.

During 1949 publication of *Occupational Medicine* fell far behind. Through the efforts of the managing editor, arrangements were made to combine *Occupational Medicine* with the *Journal of Industrial Hygiene and Toxicology*. Beginning January 1950, the combined publication will appear monthly as the *Archives of Industrial Hygiene and Occupational Medicine*.

With the retirement of Dr. Fishbein as managing editor of the special journals, it is contemplated that Dr. Richard J. Plunkett will take over this position.

Standard Nomenclature of Diseases and Operations

The 1950 revision of the Standard Nomenclature of Diseases and Operations is now in full swing. Under the chairmanship of Dr. George Baehr, committees for all sections of the book have been established and are now functioning. Final reports of several committees have been rendered. The 1950 revision will include major changes in three of the categories, the Psychobiologic Unit, Diseases of the Hemic and Lymphatic Systems and Tumor Nomenclature. The revised Psychobiologic Unit will closely follow nomenclature standards of the American Psychiatric Association and those of the Joint Armed Forces Classification. Changes in the Hemic and Lymphatic section will follow recommendations made by the Committee for Clarification of the Nomenclature of Cells and Diseases of the Blood and Blood-Forming Organs. Revision of Tumor Nomenclature will follow patterns established by the Subcommittee on Oncology of the National Research Council.

The New Growth Section of the 1950 edition and the code for histological tumor types for the International List of Causes of Disease and Death of World Health Organization will be identical. The American Cancer Society will publish this classification of tumors in pamphlet form for the use of tumor registries and clinics. The preferred term will be listed in the classification. Synonyms will be listed under the preferred term in the Alphabetical Index.

The new revision will contain code numbers parenthetically of the International Statistical Classification of Diseases, Injuries and Causes of Death in the body of the book and a cross reference to these code numbers as an addendum.

According to present plans, the 1950 revision will be ready for distribution in the latter months of that year.

Hygeia

Hygeia, the Health Magazine, published by the American Medical Association, continues to maintain its importance as a force in the field of health education. More articles taken from *Hygeia* are copied, digested and abstracted in other publications reaching the public than from any other popular magazine. The publication has assumed special importance as a reference in the education of children in health. During the year a special department devoted to the health of the child has been established and a special section of questions and answers on this subject has been added.

The problem of maintaining advertising in *Hygeia* in a quantity sufficient to bear the costs of the publication has been exceedingly difficult. Various proposals have been made for periodical advertiser relationships in the way of service by the periodical to its advertisers, but thus far no definite plan has been developed. Circulation of *Hygeia* has reached the highest point in its history, but the maintenance of a large circulation without adequate advertising constitutes a considerable financial burden.

With the retirement of Dr. Morris Fishbein as editor of *Hygeia*, the periodical has been assigned to Dr. W. W. Bauer, Director of the Bureau of Health Education of the Association. Mr. Ellwood Douglass, Managing Editor, has been instrumental in improving the quality of the illustrations and the composition of this publication. The Kable Brothers Company, Mount Morris, Ill., has been the printer of *Hygeia* for the past two years.

CIRCULATION

The circulation of *Hygeia* today is about double what it was five years ago, but in 1948, as in 1947, the magazine showed a net loss financially. The average monthly net paid circulation in 1948 was 219,897 copies, as compared with 196,046 for the previous year. The subscription list to physicians increased in 1948 to 22,854, a gain of 4,260 subscribers over 1947.

Hygeia supplements the efforts not only of physicians but also of many allied agencies, such as state and city health departments, public and private nursing units and nurse training schools. One or more copies appear in practically every high school, college, university and public library in the country. For eight years the Division of Health Education of the Pennsylvania Department of Health has been sending the magazine to every high school in the state and to a number of parochial schools, a total of 1,497 subscriptions being distributed in this manner.

Through the assistance of the Woman's Auxiliary to the American Medical Association and the state medical association auxiliaries *Hygeia* is being sent to all state and federal legislators in the following states: Florida, Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Pennsylvania, Texas and Wisconsin. For more than a decade the Woman's Auxiliary to the American Medical Association has been an enthusiastic promoter of *Hygeia* by introducing it in schools, libraries, girls' clubs, YMCA's, Parent-Teacher Associations and mothers' clubs and throughout the local communities.

During the year *Hygeia* was exhibited at the Annual Session and the Interim Session of the American Medical Association, and at the meetings of the American Public Health Association, the National Education Association, the American Dental Association, the Chicago Medical Society and the Association of Secondary School Principals.

The net loss on *Hygeia* in 1948 was $62,556.41. *Hygeia* has been published for 26 years and has shown a total profit of $445,727.84 and a total loss of $370,224.83. This leaves a net gain of $75,503.01 through 1948.

Library

Two major changes in the Association's Library in the past year were the retirement of two members of the staff from key positions and the allotment of additional space for Library use.

Miss Harriet Wilson, reference librarian since 1923, retired on April 1, and Mrs. Marjorie Hutchins Moore, who came to the American Medical Association in 1920 and served as Librarian for almost twenty-five years, resigned on May 1. Miss Magdalene Freyder took over the duties of Librarian on Mrs. Moore's retirement.

Library service has been maintained at the usual level. During the year approximately 6,500 reference questions were answered. These required compiling 2,025 package libraries and considerable correspondence. There was a noticeable increase in inquiries by telephone, many of them with reference to material in the files of the "Quarterly Cumulative Index Medicus" because its publication has been so delayed. Requests for the loan of about ten thousand periodicals were filled by the periodical lending service. Appeals from foreign countries continue to arrive, and every attempt is made to supply reprints and tear sheets whenever they are available.

The Library has begun to receive a number of new periodicals, some as complimentary copies and others on exchange. There is an increasing demand for the latter arrangement, especially from foreign publishers.

Indexes for the three 1949 volumes of THE JOURNAL of the American Medical Association were prepared in the Library as usual. In September the Librarian served as consultant on an indexing project for two radiologic journals.

Quarterly Cumulative Index Medicus

Two volumes of the "Quarterly Cumulative Index Medicus" were printed in 1949, volume 42 (July-December, 1947) and volume 43 (January-June, 1948). Volume 44 (July-December, 1948) is in preparation, but will not be delivered to subscribers before next year. Since this still leaves the Index far behind schedule, certain steps have been taken with a view to speeding publication. During May, Mr. Ralph Shaw, Librarian of the United States Department of Agriculture, was called in as a consultant to survey the situation, and a number of his suggestions were adopted. It was decided to index periodicals on a current basis beginning with July 1949 (volume 46), leaving those received in the first half of the year as a backlog to be processed gradually. It is hoped that these plans will bring the Index back to its prewar publication schedule by 1952.

Report of Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau continues to assist its present membership of 42 state medical associations through 34 state medical journals in securing advertising space sales and in servicing accounts by handling most of the details for the convenience of the journal offices.

Through its monthly bulletin, the Bureau offers helpful suggestions as well as current listings of products accepted by the Councils on Pharmacy and Chemistry, Physical Medicine and Rehabilitation and Foods and Nutrition and the Committee on Cosmetics. Acceptance of many products opens up an avenue of further prospects for the journals, all of which follow standards of advertising adopted for publications of the American Medical Association. It is, therefore, hoped to maintain present sales in subsequent years and even to increase them.

The net sales for the first nine months of the fiscal year, December 1948 through August 1949, amount to $434,659.16, as compared with $427,817.16 during the same period the preceding year. Because of regional schedules, a few of the journals gained in revenue. Some enjoyed approximately the same revenue, while a moderate loss was sustained by others. The general trend of loss of other so-called business papers runs 9 per cent (in pages) for the period January through August 1949.

The trend for the remaining three months of the present fiscal year indicates that the situation will improve. The estimated total for the full year is $589,129.42, as compared with $577,358.98 in 1948.

The Bureau, operating under the auspices of the Board of Trustees of the American Medical Association, functions in behalf of the state journal group, and all revenue is transmitted to the member journals, less operational costs, which amount to about 5.7 per cent. The Bureau is governed by the Advisory Committee which is composed of Drs. Stanley B. Weld, Connecticut, Chairman; L. Fernald Foster, Michigan; Julian P. Price, South Carolina; Carl B. Drake, Minnesota, and Walter E. Vest, West Virginia. Ex officio members of the Advisory Committee are Drs. George F. Lull, Morris Fishbein and Austin E. Smith and Mr. Alfred J. Jackson, Director of the Bureau.

Report of the Washington Office

All operations of the Washington Office are under the authority of the Board of Trustees. A legislative committee of the Board meets frequently and reviews all bills and other proposed national legislation presented to it by the Director. This Committee determines what actions are to be executed by the Washington Office staff in connection with specific legislative measures. The position of the American Medical Association on most bills can be readily stated based on standing policies. Some bills, however, require reference to the Board for extended study and advice, and some have to await fundamental policy making by the House of Delegates.

FUNCTIONS

The primary function of the Washington Office is that of an office of information. Since its authorization and establishment in 1944, the office has been charged with the responsibility of collecting and distributing information concerning federal legislation and the activities of federal departments of interest to the medical profession. In addition, it is an instrument through which the official opinions and views of the Association are made known to the Congress. This latter function has increased in importance and effectiveness during the past year. It has been, then, both a "watchdog" of Congress for the American Medical Association and a legislative office of advice and counsel to the Congress on behalf of the Association.

During the past year the Director has attended Board of Trustees meetings and meetings of the House of Delegates and its reference committees for advice on matters of national legislation. Physician members of the staff have visited state and county medical societies whenever possible to acquaint them with the Washington situation.

The work of the staff is coordinated for most effectively executing the authorized services of the office. Dr. Lawrence, the director, is responsible to the Board of Trustees for all activities and functions of the office and specifically maintains liaison with the United States Senate. Dr. Wilson is delegated as liaison with the House of Representatives and assists the Director as his deputy. Mr. Foristel, as legal advisor, analyzes all legislative matters and reports them for inclusion in the *Bulletin*. Mr. Perry, as Assistant to the Director, maintains liaison with the federal departments, and with clerical help is responsible for printing the *Bulletin*.

An additional staff member has been authorized.

SERVICES

To the Medical Profession.—Legislative measures introduced into the Congress are screened for their interest and relative importance to the profession. These bills and resolutions are quickly reported to the officials of the Association and to constituent societies through the *Bulletin* of this office. Actions taken by the Congress, including hearings and Congressional Committee reports, are also reported in either the *Bulletin* or *Comments* from this office.

A service of recognized value to representatives of the Association appearing at hearings is the orientation and counsel by the Washington Office staff prior to and during their mission at the Capitol.

Other services include: (*a*) the furnishing of bills, reports, public laws, government publications, etc., to members and nonmembers of the Association, (*b*) contact and liaison with associations and agencies to enlist and maintain their support for the Association's position on legislation and (*c*) furnishing speakers for professional and lay groups.

To the Congress and Other Branches of the Federal Government.—This office coordinates the timing and appearance of American Medical Association representatives with both Senate and House committees for hearings on medical and health legislation. This service to the Congress promotes efficiency in the presentation of official testimony giving the considered opinions of the Association, which is beneficial to members of Congress in their deliberations.

The office also renders service to individual Senators and Congressmen by furnishing them with basic informational material for speeches, interviews, discussions and questions. Congressional supporters and non-supporters of the Association's policy have made requests of this nature.

Departments of the National Military Establishment, the Federal Security Agency, Veterans Administration and other federal agencies maintain liaison with the office for interpretation of the Association's policies on legislation. This is likewise true of many national, professional, and non-professional organizations such as hospital and drug associations, labor unions, veterans' organizations and voluntary welfare agencies.

PUBLICATIONS

The Washington Office through its many contacts acquires factual information of importance to the medical profession. This information is written, edited and printed in the office and distributed without copyright to the profession through the *Bulletin*. This bulletin and *Comments* are published without schedule, depending on the information available for the timing of their issuance. The *Comments* is similar to the *Bulletin* except that it is more explanatory of legislative matters.

The mailing list for these publications consists of approximately 3,500 names, including officers, executive secretaries, and editors of state and county medical societies, and has been increased by over 1,000 names since the first of 1949. These publications are numbered consecutively beginning with each calendar year. There is an increasing tendency for state and local medical societies to use material from both the *Bulletin* and *Comments* in their journals.

The office printing equipment has been used in many instances to make additional copies of testimony required by congressional committees for members and the press. Seventy-five copies are usually required for this purpose. Additional copies of these complete statements are frequently sent out with the *Bulletin*.

GENERAL SERVICES

In addition to the foregoing, the Washington Office carries out special requests of the Board of Trustees pertaining to American Medical Association representation in Washington. Occasionally it becomes necessary to disseminate information to state associations faster than is possible through the *Bulletin*. Telephone and telegraph facilities are used for quick, direct action to alert state medical associations on changes in Congressional procedures occurring in major issues.

The 81st Congress has had submitted to it over 10,000 bills and resolutions. After screening these measures, this office has closely followed and reported over 300. To "follow" a bill means to analyze it in relation to American Medical Association policy and watch it through the various legislative processes, including personal attendance at hearings, until it becomes a law or is killed.

Each morning this office receives a report of all bills and resolutions introduced in both Houses on the preceding day. Those bills relating to public health, the practice of medicine, or of any other interest to the medical profession are selected to be followed. Inquiry is made of the introducer or his staff as to the reasons why it was introduced; whether it was introduced on behalf of himself or whether it was on the request of a constituent, another individual or an organization. This type of information often clarifies analysis of the bill.

The printed bill is available two days later and our legal advisor makes a careful study and analysis of it, after which it is reported in our *Bulletin*. It is ascertained from authoritative sources when hearings are to be held and this also is reported in the *Bulletin*. This information is immediately sent to the headquarters office in Chicago and the names of the persons who will be selected to testify are requested. Personal attendance at hearings allows the staff to be aware immediately of the testimony offered on the bills. During and subsequent to the hearings, we discuss with members of congressional committees the points on which testimony of other witnesses differs from that of our own. Following the termination of public hearings, the reference committee considers the bill in Executive Session, at which time the members determine whether the bill should be reported out of the committee or be killed. The decision of the committee is also reported in the *Bulletin*.

When a bill is reported out of a committee of the Senate, the Majority Policy Committee determines its relative importance to other legislation and places it on the Calendar of the Senate. When a major bill is reported out of a House committee, it goes to the Committee on Rules, which in a like manner places it on the Calendar of the House of Representatives. Prior to the time of debate on the floor of either House, the staff of the Washington Office discusses the bill's merits with leading Congressmen not on the original committee. After the bills are placed on the Calendar, many Congressmen request this office to provide specific information or data regarding the provisions of the bills so that they may be prepared to discuss these provisions in floor debate and to vote properly.

When the Senate and House versions of a bill differ, the two bills are referred to a Joint Conference Committee, composed of members from both Houses, to resolve the differences. In many instances our staff discusses the bill with members of this Committee.

Each congressional reference committee employs a research staff which studies all bills on which it is required to take action. This office is frequently called on by these staffs to provide needed information. The Congressional Library also supports a staff of research workers in health matters. It calls upon the Washington Office occasionally to assist in providing specific Congressmen with literature and data.

IMPORTANT LEGISLATION OF 1949

Of all the legislation followed by the Washington Office during 1949, the National Health Insurance bills (S. 1679, H. R. 4312 and H. R. 4313) were of the most concern. Hearings on these bills extended over a period of six weeks in the Senate Committee and seven weeks in the House, but both houses recessed hearings prior to adjournment, taking no definite action. The President's Reorganization Plan No. 1 was defeated by a vote of sixty to thirty-two in the Senate on August 16. This plan would have constituted the Federal Security Agency a Department of Welfare, making its present administrator Secretary with cabinet status.

Other important bills were: Aid to Medical Education (S. 1453 and H. R. 5940), which legislation obtained passage in the Senate and is being considered by the House Committee; Survey of Sickness in the United States (S. 2584) was passed by unanimous consent in the Senate and sent to the House; Hospital Construction Act Amendment (S. 614), which extends the duration of the Act for five additional years, increases federal funds available to $150,000,000 a year and raises the federal contribution, passed in the Senate on August 9—the House on October 3 passed the bill with minor changes and returned it to the Senate for concurrence; Local Public Health Units (S. 522 and H. R. 5865) was passed in the Senate on August 27 and is being considered in the House by the Interstate and Foreign Commerce Committee; School Health Services (S. 1411) passed the Senate on April 29—the House Committee has not yet reported a bill on this subject, and National Science Foundation (S. 247 and H. R. 4846) passed the Senate on March 18—the House bill was reported by the Interstate and Foreign Commerce Committee on June 14 but has not yet received approval by the Rules Committee. A resolution was filed by Representative Crosser to discharge the bill from further consideration of that committee. Representative Crosser is at present in Europe. He may call up the resolution on his return.

Report of the Assistant to the General Manager Public Relations Department

The threefold purpose of the Public Relations Department has been greatly advanced during the past year. Substantial progress has been made along the entire front of (1) serving the national, state and local medical societies in solving public relations problems and conducting public relations programs, (2) maintaining and building good will for the medical profession and (3) utilizing to the fullest the power of public relations to advance the health and welfare of the American people.

MAGAZINE AND TRADE PAPER RELATIONS

The American family is rare that does not read at least one magazine, trade paper or house organ. Many families and individuals subscribe to more than one magazine and read more than one trade paper or house organ. To take greatest medical public relations advantage of these mass circulated, nationally distributed popular magazines and other publications, the public relations department established in April a Magazine Relations Division. The first activity of this division was to write all key magazine editors of the nation, advising them of this expanded service. They were offered fullest assistance in creating article ideas, setting up authoritative interviews, organizing research, compiling data, suggesting and arranging pictures, answering questions, correcting and revising manuscripts and correcting final proofs. Thus articles favorable to doctors and to the profession generally are much more likely to appear.

A case in point is the October 11 Look Magazine article "What Is the A.M.A.?" which consisted of six full pages of type and pictures, describing the functions of the American Medical Association, its achievements and its goals. Newstand sales of this particular issue of Look were promoted in every appropriate way and supplemented greatly the 18,500,000 established reader families of Look. More than 100,000 reprints were distributed by the American Medical Association, state and county medical societies and individual doctors.

The Magazine Relations Division during the past six months has contributed extensively to the preparation of additional articles favorable to the medical profession in *Popular Mechanics,* with a readership of 12,000,000; *This Week,* a magazine supplement in 23 metropolitan newspapers with a combined readership of 21,000,000; *Today's Woman,* readership 2,100,000; *Liberty Magazine,* readership 4,000,000, and *Coronet,* readership 5,000,000. All of these mass circulation magazines are high in praise of the enlarged American Medical Association service to them.

Trade papers read by key figures in commerce, business and industry; house organs circulating among employees in hundreds of corporations, businesses and institutions; fraternal publications, and others are being likewise extensively and intensively cultivated. One approach that is proving highly successful is the sending of the American Medical Association News weekly clipsheet to trade papers and house organs.

SECOND ANNUAL MEDICAL PUBLIC RELATIONS CONFERENCE

The first American Medical Association–sponsored National Medical Public Relations Conference held in St. Louis in 1948 was a complete success. The second annual conference is to be held in Chicago at Association Headquarters and at the Bismarck Hotel on November 5 and 6, 1949. State medical associations and county societies in metropolitan areas send over 200 key leaders to these conferences to exchange medical public relations ideas, obtain proved solutions to specific problems and increase liaison among doctors and laymen charged with medical public relations responsibilities. Thirty national allied health organizations have been sufficiently interested to send representatives, and members of the Board of Trustees and other officers of the Association have participated.

The Conference represents one of the most important activities of the Department of Public Relations in its being directly helpful in the implementation of public relations programs in the state medical associations.

SECRETARY'S LETTER

The Secretary's Letter continues to be an important channel of communication between the office of the Secretary and General Manager and the constituent state and component county medical societies. The Secretary of the Association directs this activity, which is channeled through the public relations department. Its value is attested by the constant flow of requests from medical leaders who ask to be put on the mailing list, which now totals more than 3,000 names.

The Secretary's Letter keeps medical society executives informed of the activities of the Officers and Trustees and the various councils, bureaus and committees of the American Medical Association and reports pertinent developments in the medical and allied fields. It is frequently used to inspire action on the part of the constituent and component societies and provides a continuous link between Association headquarters and leaders of the profession in all parts of the country.

PR DOCTOR AND EXCHANGE

The PR Doctor and Exchange continues to be welcomed enthusiastically by state and county medical societies. It is perhaps their principal means of acquainting themselves with what other states are doing in medical public relations programs. The sound and multiplied experience of forty-eight state medical associations is thereby made available to each state.

All members of the House of Delegates are kept abreast of medical public relations activities in the various states through the PR Doctor newsletter. The president, secretaries, public relations committee chairmen and auxiliary leaders of state medical associations and editors and allied leaders of national health organizations are likewise informed.

The headquarters offices of all state medical associations and of many county medical societies receive in addition the PR Exchange, which includes actual samples of medical public relations materials produced by state medical associations, county medical societies and the American Medical Association and many other samples of pertinent literature and material.

FIELD SERVICE

State medical associations are calling increasingly on the staff of the Department to address meetings, participate in special medical public relations conferences and confer and consult with officers and committees.

During 1949, the Department head, Mr. Lawrence W. Rember, addressed meetings of six state medical associations; conducted a round-table discussion on the public relations of the American Medical Association attended by all of the public relations directors of 23 organizations at Madison, Wis.; spoke to the national convention of the Medical Service Society of America at Tulsa, Okla., and conferred at various times with public relations committee chairmen and officers of a number of state associations. He addressed numerous meetings of national and state organizations of various sorts in all parts of the country.

During 1949 the Press Relations Director, Mr. John Bach, addressed doctor-newspaper-radio conferences sponsored by four state medical associations and directed press relations activities at the annual conventions of the General Federation of Women's Clubs and the National Medical Association. He addressed numerous civic groups on socialized medicine at the invitation of county medical societies throughout the midwest area.

At all of these meetings and conferences the presence of staff members of the Public Relations Department has been praised.

PRESS RELATIONS

With the nation's newspapers, news magazines and radio news departments placing greater emphasis on advancements of medical progress, Press Relations has taken on increased importance in the Association's public relations program. This turn of events has produced an effective weapon in the campaign against nationalized medicine, because it stresses the positive side of medicine. Public attention has been focused on the fact that while death is eventual it has been postponed because doctors, working under a system of free enterprise, have developed and are constantly developing methods which reduce mortality and morbidity.

Press associations, newspapers and news magazines throughout the country have come to rely on the Press Relations Division of the American Medical Association for scientific and other facts pertaining to the affairs of medicine. Material which originates in Press Relations is accepted by editors as newsworthy and reliable. This is confirmed by the widespread use of the American Medical Association releases. Such confidence is the reward of years of service in the interest of truth in medical affairs.

A test of the efficiency and value of Press Relations came at the 1949 Atlantic City Session, perhaps the most important one in the annals of the Association. Sixty-five newspaper men and women covered the session and filed more than 350,000 words direct from the press rooms maintained in the Hotel Traymore, an all-time record. A large percentage of that wordage went over the wires of press services to every newspaper in the country and throughout the world. That means that millions of words concerning the activities of the medical profession flowed into newspaper offices for the duration of the five day session.

The Association's year round widespread activities in the interest of better health for the American people are publicized weekly through the American Medical Association News, which is distributed to more than 1,000 leading newspapers and magazines, press associations, radio networks, house organs and other mediums which have specifically requested it because of its news content. The weekly *News* condenses articles which appear in THE JOURNAL, the special journals, *Hygeia* and other publications of the Association and contains other medical and health material of public interest. Its acceptance is reflected in the usage made of the items not only on release dates but also in subsequent issues of newspapers when space permits. Clippings mentioning the American Medical Association and its activities run into the thousands yearly.

Special effort is made to see that every release goes to the home town newspapers of physicians mentioned therein. This service brings recognition of a physician in his community, and personalizes the Association. In addition, Press Relations is often called on to prepare and distribute special stories on the activities of the Association. Personal relationships have been built up with newspaper, magazine and radio editors and these contacts have proved invaluable in obtaining added consideration of releases.

Newspapers frequently issue special health and medical editions. These offer a splendid opportunity for a substantial volume of highly favorable news and feature material about the Association and the medical profession generally. To take full advantage of this opportunity and to stimulate more such editions, a special printed page entitled, "A.M.A. News Features," containing a variety of items on the activities of the Association was launched in July. This page of features was sent to all state and county medical society secretaries with a suggestion that local news angles be incorporated into the stories for use in area newspapers.

Press Relations many times anticipates news possibilities. A case in point was the distribution to newspapers, radio stations and press services of a warning which appeared in THE JOURNAL that babies might die from poisoning because of use of aniline dyes in diapers. Within a week an epidemic broke out in a Florida hospital which resulted in four deaths. The Association's warning was recalled in stories carried in newspapers and on the radio all over the country. This brought home most dramatically the American Medical Association's role in protecting the health of the American people.

SERVICES TO COUNCILS, BUREAUS AND COMMITTEES

The Public Relations Department is continuously serving all of the councils, bureaus and committees of the American Medical Association through the Secretary's Letter, the American Medical Association News clipsheet, magazines and films. Throughout the year, special occasions arise for telling the American people of the great value of the work done at Association Headquarters.

The Department provided extensive publicity in all mediums for The Ninth Annual Congress on Industrial Health; the Fourth Annual World Health Conference, the Conference on Sex Hormones and Breast Cancer, Conference of the Council on National Emergency Medical Service, Council on Medical Service action at the national Blue Shield meeting in Florida, the National Conference of County Medical Society Officers, National Conference of Physicians and Schools and a press conference on the return of Dr. W. W. Bauer, Director of the Bureau of Health Education, from his service in Germany.

WOMAN'S AUXILIARY

The Woman's Auxiliary to the American Medical Association and the state medical association auxiliaries can be of substantial value to the over-all, continuing public relations program of the medical profession. These groups want to help and the national Auxiliary is looking to Association headquarters for assistance and guidance.

A member of the staff of the Public Relations Department has been specifically assigned to work in close cooperation with the Assistant Secretary of the Association and the Executive Secretary of the Woman's Auxiliary in developing long range plans for assisting the national and state groups in every way possible.

The Department director and assistant director participated in a panel discussion at the convention meeting of Auxiliary public relations chairmen during the Atlantic City Session and the director talked on public relations before the state conventions of the Illinois and Iowa auxiliaries.

PUBLIC RELATIONS LIBRARY

In order to fill all requests for medical public relations information, one activity of the Department during 1949 was the setting up of a public relations library. This was done by an experienced editorial research worker, who collected and classified medical public relations pamphlets, newspaper clippings, advertisements and other background material. Increasingly, the public relations chairmen of county medical societies, as well as of state medical associations, are turning to the department for this service and assistance.

Report of the Council on Pharmacy and Chemistry

The Council on Pharmacy and Chemistry continued to expand its program to advance therapeutics. Additional emphasis was given to research in this field by association of the professional staff of the Council office with members of other scientific groups and by means of the standing committees of the Council maintained for this purpose.

The primary function of the Council, which is drug evaluation, expanded during the year to include consideration of an increasing number of therapeutic agents. The Council also formed a Committee on Toxicology to study medical problems related to the use of pesticides and other agents that may cause poisoning.

RESEARCH

Only a relatively brief review of the great diversity of the Council's work and the services for which it has come to be internationally recognized can be presented in this report, but the Council's research interests deserve special consideration. Research activities of the Council are formal and informal. Through direct contacts with individual investigators, representatives of pharmaceutical industry and various scientific groups, the Council headquarters staff provides informal encouragement by conferences and other methods. The program of product evaluation also provides an effective method of encouraging the development of better drugs; application of the rules for acceptance alone serves as a stimulus for the study of new therapeutic agents. Research investigations are aided by the standing Committee on Therapeutic Research, which administers grants-in-aid for the study of basic problems in therapeutics, and by the Therapeutic Trials Committee, which sponsors collaborative clinical studies in the use of promising new drugs. Since the previous annual report, the Committee on Therapeutic Research has provided 21 grants-in-aid for experimental investigation of a variety of therapeutic problems. Several papers on the results of this research already have been published in scientific journals.

COMMITTEE ON THERAPEUTIC RESEARCH

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

From Jan. 1 to Oct. 1, 1949, the Committee issued twenty-one grants. A detailed list of these grants, together with a list of publications during 1948, and of unexpended grants made before Jan. 1, 1949, is appended.

The following grants were issued before Jan. 1, 1949. In some cases an unexpended balance remains, or the work is not yet completed, or not yet published:

Grant 408: Ephraim Shorr, Cornell University Medical College, the effect of progesterone on the vaginal smear, $300.00.

Grant 454: W. L. Mendenhall and Albert J. Plummer, Boston University School of Medicine, the quantitative determination of theophylline, $50.00.

Grant 455: Frederick H. Pratt and Marion A. Reid, Boston University School of Medicine, the effect of cardiac drugs on the denervated lymphatic hearts, $100.00.

Grant 459: Mary E. O'Sullivan, Bellevue Hospital, New York City, the therapeutic effect of estradiol in muscular dystrophy, $100.00.

Grant 499: Joseph Litwins, New York Medical College, the chemistry and hematology of blood donors, $200.00.

Grant 506: Andrew F. Burton, Howard University School of Medicine, (1) the distribution of sulfanilamide in maternal and fetal tissues at various stages of pregnancy, (2) the toxic effects of quinine on the fetus in utero, $600.00.

Grant 514: Morton McCutcheon, University of Pennsylvania School of Medicine, the toxicity of sulfonamides and penicillin and the mechanism of chemotaxis in leukocytes, $150.00.

Grant 516: Nellie Perry Watts, Woman's Medical College of Pennsylvania, methods to prolong the action of local anesthetic drugs, $250.00.

Grant 525: Herbert Silvette, University of Virginia Medical School, the effect of low barometric pressures on kidneys previously damaged, either surgically or by drugs, $250.00.

Grant 533. Robert S. Teague, University of Alabama School of Medicine, the metabolism of diethylstilbestrol and its derivatives with emphasis on the ratio of absorption, the distribution, fate and excretion of these drugs, $500.00.

Grant 553: Adrian C. Kuyper, Wayne University College of Medicine, a procedure for the detection and determination of unidentified plasma constituents, $375.00.

Grant 561: G. L. Cantoni, Long Island College of Medicine, the mechanism whereby potassium exerts its effect on the intact smooth muscle, $400.00.

Grant 569: Samuel L. Saltzman and Charles Haig, New York Medical College, the therapy of retinitis pigmentosa, $500.00.

Grant 570: F. William Sunderman, University of Pennsylvania School of Medicine, the use of congo red in measuring serum volume and in detecting amyloidosis, $400.00.

Grant 572: C. H. Werkman, Iowa State College Department of Bacteriology, the mechanism of action of penicillin and streptomycin, $1,000.00.

Grant 575: Tom Addis, E. Barrett, L. J. Poo, L. Way and W. Yuen, Stanford University School of Medicine, reasons for the differences in the effects of various proteins on the rate of growth of the kidney, $1,000.00.

Grant 582: Allan D. Bass, Syracuse University College of Medicine, vascular disease and hypertension, $500.00.

Grant 583: Paul J. Hanzlik and R. H. Dreisbach, Stanford University School of Medicine, the intravenous use of quinine, $200.00.

Grant 585: Maria Wiener Kirber, Woman's Medical College of Pennsylvania, and Werner Henle, University of Pennsylvania School of Medicine, the complement fixation reaction in epidemic influenza, $350.00.

Grant 586: Harold D. Green, Wake Forest College, Bowman Gray School of Medicine, the role of the liver and kidneys in shock, $500.00.

Grant 587: Richard C. de Bodo, New York University College of Medicine, the antidiuretic action of some depressants of the central nervous system, $500.00.

Grant 588: Richard C. de Bodo, New York University College of Medicine, the role of gluconeogenesis and carbohydrate utilization in insulin hypersensitivity, $500.00.

Grant 591: Gregory Pincus, Worcester Foundation for Experimental Biology, the mechanism of action of gonadotropin, $2,400.00.

Grant 593: Robert Chambers, New York University College of Medicine, capillary fragility, $500.00.

Grant 594: Windsor C. Cutting, Stanford University School of Medicine, chemotherapy of virus infections, $500.00.

Grant 595: J. Murray Luck, Stanford University School of Medicine, the use of low-salt human serum albumin for the relief of hypoproteinemia and edema, $500.00.

Grant 599: David F. Marsh and Clark K. Sleeth, West Virginia University School of Medicine, the quantitative aspects of the well known tachyphylaxis that occurs with repeated administration of such drugs as amphetamine, ephedrine, tuamine, and propadrine, $400.00.

Grant 601: Edmond J. Farris and Boland Hughes, The Wistar Institute of Anatomy and Biology, characteristics of semen in fertile and infertile men, $1,000.00.

Grant 602: A. C. Ivy, University of Illinois College of Medicine, the alleged sterilizing action of the expressed juice of Caladium seguinum (Madaus), $450.00.

Grant 603: Joseph H. Cort, Yale University School of Medicine, the effects of chronic stimulation of the autonomic nervous system of normal unanesthetized animals, $500.00.

Grant 604: E. M. K. Geiling, B. J. McIntosh, A. Ganz, L. Brimmer and F. E. Kelsey, The University of Chicago School of Medicine, biosynthesis of important pharmacological drugs, $200.00.

Grant 605: R. H. Dreisbach and Go Lu, Stanford University School of Medicine, vasomotor reactions of circulatory depressants, $300.00.

Grant 606: Harald Holck, University of Nebraska College of Pharmacy, delayed death in rats following administration of nostal,® $250.00.

Grant 607: Boyd Houchin, University of Louisville School of Medicine, the qualitative estimation and differentiation of tocopherols in blood of patients with congestive heart disease before and after the parenteral administration of dl-alpha-tocopheryl phosphate, $200.00.

Grant 608: Otto Krayer, Harvard Medical College, the therapeutic action of Sh-containing substances against the poisonous effect upon the circulatory system of bismuth compounds, especially sodium bismuth tartrate, $500.00.

Grant 609: Clinton H. Thienes, University of Southern California School of Medicine, the effect of cholinergic anti-cholinergic and other relative drugs on vacuole formation in exocrine cells of the pancreas, $150.00.

Grant 610: Burnham S. Walker and Norwood K. Schaffer, Boston University School of Medicine, improved analytical methods for the measurement of blood levels of urethane, $500.00.

Grant 611: Sidney Werner and Edith Quimby, Columbia University College of Physicians and Surgeons, the use of radio-active iodine in the treatment of toxic goiter, $500.00.

Grant 612: J. Lerman, Massachusetts General Hospital, therapeutics of hyperthyroidism, $500.00.

Grant 613: Eugene P. Pendergrass and Harry P. Schenck, University of Pennsylvania School of Medicine, the effects of radiation upon the lymphoid tissue of the human nasopharynx, $400.00.

Grant 614: Richard C. de Bodo, New York University College of Medicine, the mechanism of insulin hypersensitivity, $500.00.

Grant 616: Albert Dorfman, University of Chicago School of Medicine, the several basic components of the plasma of sick children, $350.00.

Grant 617: Ralph G. Janes, The State University of Iowa College of Medicine, the action of nicotinic acid, nicotinamide and the alcohol of niacin on certain phases of fat and carbohydrate metabolism in the diabetic rat, $400.00.

Grant 618: T. T. Chen, State Teachers College, Bemidji, Minnesota, an antibiotic substance which may have therapeutic value with respect to protozoan diseases, $500.00.

Grant 619: E. K. Marshall, Jr., The Johns Hopkins University School of Medicine, quinoline compounds which appear to have an action directly upon the kidney similar to that exhibited by posterior pituitary extract, $500.00.

Grant 620: L. M. N. Bach, The Tulane University of Louisiana School of Medicine, the effect of the antidiuretic hormone on the oxygen consumption of the kidney, $350.00.

Grant 622: Lester M. Morrison, College of Medical Evangelists, Los Angeles, the role of lipoid metabolism in the pathogenesis of coronary artery thrombosis and in atherosclerosis of human subjects, $750.00.

The following grants have been issued since Jan. 1, 1949:

Grant 623: R. P. Ahlquist, University of Georgia School of Medicine, a pharmacological study of the nucleosides, $200.00.

Grant 624: S. W. Clausen, University of Rochester School of Medicine, the influence of coconut milk upon the growth and utilization of vitamin A by the rat, $265.00.

Grant 625: Harald Holck, University of Nebraska College of Pharmacy, tolerance and cross-tolerance to nostal,® $250.00.

Grant 626: David Fielding Marsh, West Virginia University School of Medicine, comparative pharmacology of the isomeric heptylamines, $200.00.

Grant 627: Janet W. McArthur, Massachusetts General Hospital, adrenal cortical function in diabetic acidosis, $500.00.

Grant 628: James M. Orten, Wayne University College of Medicine, relation of citric acid and related organic acids to carbohydrate metabolism, particularly in experimental diabetes, $350.00.

Grant 629: Isaac Starr, University of Pennsylvania School of Medicine, standardization of the ballistocardiogram, $500.00.

Grant 630: Marshall R. Warren, University of Tennessee School of Medicine, possible dangers pursuant to indiscriminate use of irritating substances for intramuscular injection, $250.00.

Grant 631: C. P. Kraatz, Jefferson Medical College of Philadelphia, to determine in dogs whether pyridoxine will antagonize the vomiting induced by various types of drug stimulation, $300.00.

Grant 632: E. B. Carmichael, Medical College of Alabama, meperdine hydrochloride, $500.00.

Grant 633: Allan D. Bass, Syracuse University College of Medicine, relationship of sulfonamides to fetal development, $500.00.

Grant 634: M. H. F. Friedman, Jefferson Medical College of Philadelphia, experimental therapy of nonspecific ulcerative colitis, $500.00.

Grant 635: J. Maxwell Little, Wake Forest College, Bowman Gray School of Medicine, heat lability of the diuretic factor present in dialyzed human urine, $500.00.

Grant 636: R. R. Overman, University of Tennessee School of Medicine, the mechanisms of ionic imbalance in malaria and associated pathophysiological states, $500.00.

Grant 637: George P. Child, Albany Medical College, the mechanism of action of local anesthetics *in the symptomatic treatment of peptic ulcer* and related conditions, $500.00.

Grant 638: A. H. Schein, University of Vermont College of Medicine, uric acid levels in human beings, $500.00.

Grant 639: Peter Talso, University of Chicago Department of Medicine, mechanism of the excretion of lithium in dogs, $175.00.

Grant 640: Robert Elman, Barnes Hospital, St. Louis, further development of a flame photometer, $500.00.

Grant 641: *Joseph B. Kirsner, Walter L. Palmer and William E.* Ricketts, University of Chicago School of Medicine, hepatic disease, $500.00.

Grant 642: Robert C. Lowe, University of Oklahoma School of Medicine, hepatic metabolism, $500.00.

Grant 643: David Lehr, New York Medical College, triple sulfonamide mixtures, $500.00.

Following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1948:

Werner, S. C.; Quimby, E. H., and Schmidt, C.: The Clinical Use of Radioactive Iodine, Bull. New York Acad. Med. **24**:549 (Sept.) 1948; Clinical Experience in Diagnosis and Treatment of Thyroid Disorders with Radioactive Iiodine (Eight-Day Half-Life), Radiology **51**:564 (Oct.) 1948.

Cutting, W. C.; Dreisbach, R. H., and Neff, B. J.: Antiviral Chemotherapy: Further Trials, Stanford M. Bull. **6**:481 (Nov.) 1948.

Sevag, M. C., and Miller, R. E.: Studies on the Effect of Immune Reactions on the Metabolism of Bacteria: I. Methods and Results with Eberthella Typhosa, J. Bact. **55**:381 (March) 1948.

Moraczewski, S. A., and Kelsey, F. E.: Distribution and Rate of Metabolism of Phosphorus Compounds in Trypanosoma Equiperdum, J. Infect. Dis. **82**:45 (Jan.-Feb.) 1948.

Zierler, K. L.; Grob, D., and Lilienthal, J. L., Jr.: On the Antithrombic and Antiproteolytic Activity of Alpha Tocopheryl Phosphate, Am. J. Physiol. **153**:127 (April) 1948.

Krayer, O., and Farah, A.: Action of Cysteine and of Dimercaptopropanol in Heart Failure Caused by Sodium Bismuth Tartrate, Federation Proc. **7**:235 (March) 1948.

Kligman, A. M., and Rosensweig, W.: A Simple Quantitative Method for the Laboratory Assay of Fungicides, J. Invest. Dermat. **10**:51 (Feb.) 1948; Studies With New Fungistatic Agents, I. For the Treatment of Superficial Mycoses, ibid. **10**:59 (Feb.) 1948.

Bakst, H.; Kissin, M.; Leibowitz, S., and Rinzler, S.: The Effect of Intravenous Aminophylline on the Capacity for Effort Without Pain in Patients with Angina of Effort, Am. Heart J. **36**:527 (Oct.) 1948.

Morrison, L. M.; Chaney, A. L., and Hall, L.: Cholesterol Metabolism in Acute Coronary Thrombosis, Am. J. M. Sc. **216**:32 (July) 1948.

Morrison, L. M., and Rossi, A.: Absorption of Experimental Atherosclerosis by Choline, Proc. Soc. Exper. Biol. & Med. **69**:*283 (Nov.) 1948.*

Weissberg, J., and McGavack, T. H.: Inulin Clearance in the Altered Endocrine State, New York State J. Med. **48**:2615 (Dec.) 1948.

Logsdon, C. S., and McGavack, T. H.: Death Probably Due to Potassium Deficiency, Following Control of Diabetic Coma, J. Clin. Endocrinol. **8**:658 (Aug.) 1948.

McFee, R.: A Critical Discussion of the Bioelectric "Doublet" Theory, Federation Proc. **7**: 79 (March) 1948.

Marsh, D. F.: The Comparative Pharmacology of the Isomeric Heptylamines, J. Pharmacol. & Exper. Therap. **94**:225 (Nov.) 1948.

Wertenberger, G. E., and *Hafkesbring, R.: The Effect of Serum* Hypersensitivity Reactions upon the Electrocardiogram, Federation Proc. **7**:132 (March) 1948.

Farris, E. J.: Motile Spermatozoa as an Index of Fertility in Man, Anat. Rec. **86**:593 (Aug.) 1948.

Ross, V.: Preparation of Diphtheria Toxin Solution Requiring No Control in the Schick Test, J. Immunol. **59**:207 (June) 1948.

Bucher, G. R., and Anderson, A.: The Uropepsin Output in Cats Given Histamine-Caffeine in Beeswax, Federation Proc. **7**:16 (March) 1948; Uropepsin Output in Cats Treated with Caffeine and Histamine, Am. J. Physiol. **153**:454 (June) 1948.

THERAPEUTIC TRIALS COMMITTEE

During the year, the Therapeutic Trials Committee completed consideration of the methods of clinical investigation and evaluation of moist heat in poliomyelitis and rendered a full report to the National Foundation for Infantile Paralysis, which had originally requested advice on this matter. In its deliberations, a subcommittee developed certain general principles applicable to the evaluation of any agent proposed for the treatment of poliomyelitis. These were formulated into a comprehensive report and have been published in THE JOURNAL under the auspices of the Council.

In conjunction with the Council on Industrial Health, the Committee completed a survey of aluminum treatment and prophylaxis of silicosis and collaborated with the Council on Industrial Health and the Council on Pharmacy and Chemistry in preparing and publishing a critical report on this subject.

The investigation of chlorophyll preparations in wound healing, conducted under the auspices of the Committee by Dr. I. S. Ravdin and his associates was completed and the results were published as a report to the Council on Pharmacy and Chemistry. An investigation of isopropylarterenol in bronchial asthma was undertaken by Dr. Leslie N. Gay, and the results have been published. This work aided the Council in reaching a decision to accept the drug for inclusion in New and Nonofficial Remedies.

The Committee has sponsored the preparation and publication of a report on statistical methods by Dr. H. M. C. Luykx and a series of reports on methods of evaluation of narcotic and analgesic drugs by Drs. Jane Denton and Henry K. Beecher.

Progress reports on the use of methylcellulose in chronic constipation, streptomycin in granuloma inguinale, and on adjusted ophthalmic solutions have been received and the work on these problems is continuing under the auspices of the Committee.

In April the Committee held a four day meeting of all investigators participating in the Collaborative Study of Estrogens and Androgens in Mammary Cancer. More than eighty scientists participated in these meetings, and future studies were planned. A brief summary of the data obtained to date has been published, and the complete proceedings of the Conference are now available in a paper-covered book which may be obtained at a nominal charge by workers in this field.

The investigations on steroid hormones in mammary cancer are proceeding at an accelerated pace. Records on nearly 1,000 cases of breast cancer have been submitted to the Committee, and these are being analyzed and the medical profession is being kept informed of the progress of this study at frequent intervals. A preliminary survey of the accumulated specimens submitted by participating investigators was undertaken by the Committee's consultants on Pathology and Radiology at the Armed *Forces Institute of Pathology, and a complete review of this* material is planned for the near future.

Among new projects commenced this year under Committee auspices is an investigation of khellinin and visammin in cardiovascular conditions. This work has just started and results for reporting are not expected until next year.

PUBLICATIONS AND REPORTS

The Council continued the publication of its annual volume, New and Nonofficial Remedies, in which are described the drugs accepted by the Council. New and Nonofficial Remedies and its companion books, Useful Drugs and the Epitome of the U. S. P. and N. F., are printed and distributed by the J. B. Lippincott Company under an arrangement begun in 1947 to meet the demand for these volumes. "N. N. R." is widely recognized as a standard of reference for nonofficial drugs and thus takes its place with the "official" publications of the country, The United States Pharmacopoeia and The National Formulary. "N. N. R." *provides statements of actions and uses for many* "official" drugs, but the Epitome of the U. S. P. and N. F. supplies brief information on the actions, uses and dosage of all "official" preparations. Useful Drugs offers a selective list of the most important drugs from all three sources.

Since its last annual report, the Council has implemented its policy to exclude from N. N. R. those "official" drugs and preparations of such drugs which have been included in either the U. S. P. or N. F. for more than twenty years. This policy is *based on the assumption that the therapeutic uses and properties* of such articles can be expected to be well known after such a period of "official" recognition. By this step, the Council hopes to place more emphasis on the dissemination of knowledge of less well established therapeutic agents.

Plans are under way to revise the Council's other book publication, Glandular Physiology and Therapy. Revision of Useful Drugs is planned for next year. Revision of the Epitome of the U. S. P. and N. F. is made as those "official" publications are revised. Since the last report, the Council office staff in collaboration with other agencies of the American Medical Association assisted in the revision and editing of the American Medical Association "Intern's Manual," now printed by arrangement with W. B. Saunders Company. It is also exploring the possibility of revising "Fundamentals of Anesthesia" which has been out of print for several years.

During the year the Council issued numerous reports for publication in THE JOURNAL, which include those made to the Council by the Therapeutic Trials Committee and by outside investigators whose work was either encouraged or sponsored directly by the Council. The Council continued to issue informative reports concerning products which are exploited with unwarranted claims to the medical profession. All published reports are reprinted annually in the Annual Reprint of the Reports of the Council.

EVALUATION OF DRUGS FOR ACCEPTANCE

During the year the facilities for handling the drug acceptance program have increased sufficiently to permit even more rapid handling of drug products submitted to the Council for consideration. The Council maintains a standing Committee on Nomenclature to facilitate consideration of trade names under the Council Rules and has recently authorized members of that committee to pass on such names without full Council consideration as a means of expediting action on therapeutic preparations. The Council office makes increasing use of a large number of expert consultants in the various fields of therapeutics to provide members of the Council with a concensus when the Council is considering acceptance or rejection of drug preparations. This lessens the time required for deliberation and provides promptly the necessary information on new therapeutic agents.

Since the last annual report, the Council considered 289 presentations on drug products, of which 49 represented new therapeutic agents. The over-all figure shows an increase over the previous year, but there were ten fewer new drugs involved.

The Council has abandoned its previous policy of reconsidering each accepted product at the end of every three year period, because this practice has been obviated through a more complete annual revision of New and Nonofficial Remedies. However, the Council reviews from time to time the status of groups of drugs and eliminates or retains these agents in accordance with current medical opinion.

JOINT COMMITTEE ON PESTICIDES

The Council has formed a standing Committee on Toxicology which includes a subcommittee designated as the Joint Committee on Pesticides. The latter was organized to investigate the medical problems peculiar to the use of insecticides, rodenticides and other agricultural chemicals employed for the destruction of crop and household pests. The broader aspects of the problem involve possible contamination of food during production, the precautions required to avoid deleterious effects to handlers of the toxic agents and methods for treatment of poisoning from them when this occurs. A conference to discuss the various problems involved was sponsored by the Council during the past year. It is planned to hold another meeting, at which time it is hoped to develop other phases of a program to consider pesticides and other toxicologic agents of medical interest.

MEETINGS

In addition to the meetings of its various committees, the Council holds during each calendar year an annual meeting to review general scientific problems of fundamental importance to therapeutics, to consider modifications or extensions in its procedure and to receive reports from its various standing committees. The consideration of products, publications, reports and other regular activities is conducted by means of a biweekly bulletin.

COLLABORATION

The Council maintains liaison with other scientific groups to exchange technical information. It is represented at many important meetings of other agencies and organizations. Several such contacts were effected during the past year by members of the Council and professional members of its headquarters staff.

Information is regularly exchanged between the revision committees of the U. S. Pharmacopeia and the National Formulary, the Food and Drug Administration, the United States Public Health Service and the Veterans Administration. The Council office also maintains a list of organizations to which lists of recently accepted drug products are regularly sent and has recently entered into agreement with another, the Joint Scandinavian Pharmacopeial Commission, to exchange information concerning the nomenclature on new drugs.

EXHIBITS

The Council office occasionally assists in the preparation of scientific exhibits on topics pertaining to the diagnosis, prevention or treatment of disease through the use of medicinal agents. Since the last report, five such exhibits, for which the Council is responsible, were displayed at meetings where they had not previously been shown. This represents a slight reduction from the number of displays made the previous year. As time and funds permit, new exhibits of scientific interest are planned for the future. This is considered an important adjunct for the dissemination of therapeutic knowledge in addition to the books and reports published under the supervision of the Council.

COUNCIL OFFICE STAFF

During the year the headquarters staff was enlarged to add a full time bacteriologist to act in an advisory capacity for the consideration of antiseptics and biologic preparations, and a full time physician with clinical experience in endocrinology and venereal diseases to aid in the consideration of therapeutic agents in these fields.

The Council office continues to maintain a supporting office staff commensurate with the needs for administration of the Council files, correspondence and publications. The loyalty of these persons is largely responsible for the efficient manner in which the work at headquarters has progressed.

The professional members of the headquarters staff continued to provide their services as speakers before interested groups as a means of increasing the understanding and knowledge of the work of the American Medical Association, the Council and other subjects of general interest. Many such appearances were made during the past year by the Secretary and other members of the professional staff.

APPRECIATION

The Council wishes to express its appreciation to all other offices at the headquarters of the Association, to the Board of Trustees and other officers of the Association for their thoughtful consideration and cooperation, and also to other agencies and individuals whose assistance has been helpful in maintaining and extending many of the Council activities.

Committee on Scientific Research

On Dec. 31, 1948, the Committee on Scientific Research of the American Medical Association went out of existence, bringing to a close forty-eight years of active work in the distribution of funds appropriated each year by the Association in support of research on concrete scientific problems. The Committee was created in 1900, and the Board of Trustees was instructed at that time to set aside the sum of $500 annually for the work to be done, the sum to be increased in the future to as great extent as possible. During the intervening years the Committee has issued a total of 742 grants, in most cases in sums of $500 or less.

During 1948 sixteen grants were issued for a total of $13,881, and work is still in progress on twenty-seven grants issued previous to 1948. All of the records pertaining to these studies, as well as the historical records, have been transferred by the Chairman of the Committee to the office of the Council on Pharmacy and Chemistry. The Council office is maintaining open files on the unfinished business of this Committee and will continue to keep records on the progress and completion of the studies for which grants were issued.

The Board of Trustees wishes to offer at this time an expression of sincere appreciation for the service rendered by the Committee on Scientific Research and particularly by its Chairman, Dr. Ludvig Hektoen of Chicago, who has served in that capacity for many years.

Report of the Laboratory

Because it was understaffed during and immediately after the war, the Laboratory had to curtail many of its services to physicians and concentrate on its primary function, the examination of products submitted to the Council on Pharmacy and Chemistry. The great increase in the number of drugs submitted within the last few years required a larger laboratory staff to maintain the schedule of work. During the past year, the Laboratory acquired its full complement of eight chemists. Several functions soon will be resumed, and the Laboratory's services to physicians will be expanded.

WORK FOR THE COUNCIL ON PHARMACY AND CHEMISTRY

The increase in personnel, space and equipment is reflected in the increased number of products examined during the past year. Over 300 individual preparations referred to the Laboratory by the Council on Pharmacy and Chemistry were examined. Of these, 44 were products for which tests and standards had to be developed.

In the past the Laboratory has examined periodically products obtained from the open market. While this has been done to some extent in the past year, it will be done regularly in the future.

The Laboratory has aided the Council on Pharmacy and Chemistry in the preparation of statements of a chemical nature and in matters of nomenclature for new monographs which are prepared for publication.

With the establishment and operation of the Council on Pharmacy and Chemistry's Committee on Cosmetics, the Laboratory expanded its facilities and program of examination to include cosmetics. Several cosmetic preparations and appliances already have been examined.

WORK FOR OTHER DEPARTMENTS OF THE ASSOCIATION

The Laboratory devoted much time to work for other departments at headquarters. It was frequently called on to review critically articles and pamphlets of a chemical nature concerning products of doubtful medicinal value on which the Bureau of Investigation reports to the physician in columns of The Journal. Analytical studies were made on preparations such as "Imdrin" and Hoxsey's "cancer cures" and the results reported to the Bureau.

It was often requested to check the accuracy of the chemical statements and nomenclature in articles presented for publication in the periodicals of the American Medical Association.

Several determinations of vitamin D_3 products were made for the Council on Foods and Nutrition.

During the past year the Association's Advertising Committee often has called on the Laboratory to consider chemical claims advanced in advertising copy. A decision on these matters frequently has required extensive Laboratory examination of properties of drugs and study of apparatus.

The reference library used by the Division of Therapy and Research is supervised and maintained by the Laboratory.

SPECIAL PROBLEMS

In many instances the therapeutic value of a drug depends on the determination of unknown facts or clarification of ill-defined facts, as for example, the suitability of penicillin powders for inhalation submitted for Council consideration depended on the particle size of the powders. Examination of the powders in the Laboratory brought out several contradictory factors which have been called to the attention of the pharmaceutical houses concerned.

An extensive examination of antacids is in progress in an attempt to provide methods of in vitro evaluation.

When the early reports from physicians concerning the effects of lithium compounds as salt substitutes were received, the Laboratory immediately carried out analyses. The results subsequently were published in The Journal with a description of the general chemical and physical properties of lithium compounds.

Much of any chemical work that is not strictly routine demands development of special methods and apparatus. The ingenuity of members of the Laboratory staff was shown on many occasions by the development of necessary apparatus. Newer technics reported in the chemical literature for separating or analyzing organic compounds are constantly being studied and applied to the examination of pharmaceuticals.

OTHER ACTIVITIES

During the past year the Laboratory has cooperated with other organizations interested in the development and maintenance of standards for pharmaceutical products. At the request of the Food and Drug Administration Laboratories, the Laboratory of the American Medical Association took part in a collaborative study on a new procedure developed by the Food and Drug Administration for the chemical assay of estrogens. The Veterans' Administration requested the Laboratory to establish tests and standards on an important drug for which none were available. A spectrophotometric study on several drugs was begun in cooperation with the Laboratory of the American Dental Association. In addition there is a constant exchange of data and views on tests and standards between the Laboratory and the United States Pharmacopeia.

Each year the Laboratory edits for the Council on Pharmacy and Chemistry the section of New and Nonofficial Remedies concerned with tests and standards. This year an extensive revision of the style of this section has been undertaken. This has been done to clarify the tests for the pharmaceutical manufacturer who uses tests and standards as procedures of control, for the pharmacist as a source of information for compounding drugs, and to law enforcement agencies which may use it as a series of regulations as a guide for the exclusion of unworthy products in the medical field. Some revision was required because of the issue of new editions of the United States Pharmacopeia and National Formulary, because tests and standards of drugs appearing in the official compendia are omitted from New and Nonofficial Remedies. Tests and standards developed by the Laboratory for 42 products will be wholly or in part incorporated in the forthcoming edition of the official compendia.

Report of the Council on Physical Medicine and Rehabilitation

In 1948 the scope of the Council's responsibilities was extended to include rehabilitation, and the name of the Council was altered accordingly. "Rehabilitation" is a broad term, and could be interpreted to embrace the entire field of medicine. The Council, however, interprets it in a more restricted sense as the process of restoring handicapped persons and returning them as useful members of society at the earliest possible moment. It might be referred to as the third phase of medical care in that it takes the patient from the bed and seeks to reestablish him in his former job or in a substitute one to adjust to his handicap. The change is reflected in the preparation of three new chapters for inclusion in the 1950 edition of the "Handbook of Physical Medicine and Rehabilitation," chapters on "Rehabilitation," "Amputees and Artificial Limbs" and "Applications of Physical Medicine to Problems of Hearing."

Approximately 110 pieces of apparatus were submitted for consideration during 1949, of which 70 were considered, inspected and reported on in The Journal. Consideration is going forward on the remaining appliances. Among the devices were hearing aids, electrocardiographs, humidifiers, contraceptive devices, incubators, diathermy equipment, audiometers, stethoscopes, nebulizers, sun lamps, filters, black light lamps, irrigators and protectors, bandages, resuscitators, foot exercisers, germicidal lamps, comfort pillows, insufflators, glycol vaporizers, enuresis equipment, steam packs, blood irradiators, oxygen tents, low voltage generators, cauteries and exercising devices.

In some instances the Council cooperated with the Council on Pharmacy and Chemistry to investigate and report on products which were in part physical and in part chemical.

The Council was called on to assist in formulating curriculums for undergraduate training in physical medicine and rehabilitation in medical schools. It cooperated with the Council on Medical Education and Hospitals regarding the content of curriculums for residencies in hospitals, postgraduate instruction on the professional level and schools for lay assistants.

PUBLICATIONS

The booklet "Apparatus Accepted" was revised and brought up to date. The "Handbook of Physical Medicine" has been completely revised and is in the hands of the printers. It will now be known as the "Handbook of Physical Medicine and Rehabilitation."

Thirteen adopted articles were published during the year, and several other articles are being considered and are awaiting publication.

ATOMIC ENERGY

Radioactive materials have been considered by the Council. Recently radon ointments have been found unacceptable and the information made available. Radium D applicators for use in eye conditions are still undergoing consideration.

PRODUCTS CONSIDERED

Three professional ultraviolet lamps were considered and accepted. Two germicidal lamps were considered, one accepted and one not accepted. One infra-red, one diagnostic and one black light were considered and accepted. For relief of the allergic patient, one pillow, one cover for mattresses and pillows and one baby comforter were considered and accepted. One pillow designed for the comfort of the pregnant woman was accepted. Two generators of direct and alternating current for use in diagnosis and therapy were considered. In the opinion of the Council, there is no necessity for multiplicity of current combinations in an electro-therapeutic apparatus, since the evidence submitted to justify some of them is not critical. Several glycol vaporizers were submitted and it is the opinion of the Council that insufficient critical evidence has been presented to warrant acceptance of the devices as a means of preventing cross infection such as colds and other respiratory diseases.

COUNCIL CONSULTANTS

American Health Resorts.—The Consultants on American Health Resorts have been going forward with consideration of spas in the United States. Rules under which the Council accepts health resorts for listing have been revised and are ready for distribution. One health resort at the Army and Navy General Hospital, Hot Springs, Ark., was accepted this year.

Audiometers and Hearing Aids.—The report "Minimum Requirements for Acceptable Pure Tone Audiometers" was revised and published. Twenty-two hearing aids were submitted, and 20 were accepted; the others are undergoing consideration. Five audiometers were submitted, and 2 were accepted; the others are undergoing consideration.

Clinical Thermometry.—The Council through its Consultants on Clinical Thermometry is continuing its survey of clinical thermometers. The accuracy, efficiency, calibration and other problems related to clinical thermometers are being studied.

Contraceptive Devices.—The report "Requirements for Acceptability of Contraceptive Devices" was revised and published. Two devices were submitted and two were accepted.

Education.—The Consultants on Education were most active during the year studying the essentials of a school for physical medicine and rehabilitation and suggesting a curriculum for postgraduate study and internship in hospitals. In this program the Council cooperated with the Council on Medical Education and Hospitals and also with the American Congress of Physical Medicine.

Electrocardiographs.—Six instruments were submitted and three were accepted and reports published in THE JOURNAL. The others are undergoing consideration.

Electroencephalographs.—The report "Minimum Requirements for Acceptable Electroencephalographs" was published and the Council is going forward with the consideration of these instruments.

Occupational Therapy.—The Consultants have advised the Council relative to the problems which are of mutual interest in the field of occupational therapy.

Ophthalmic Devices.—The Consultants have given advice on tinted lenses and contact lenses and have presented a report to the Council on radium D applicators to the eye for adoption and publication. It has sponsored the preparation of an article on color blindness and has cooperated with the Bureau of Health Education in consideration of lighting in public schools.

Respirators.—One portable respirator was submitted and accepted. Other respirators are undergoing consideration.

Roentgen Rays and Radium and the Medical Aspects of Atomic Energy.—The Council through its Consultants has gone forward with the consideration of certain radioactive materials. Most of this work has been confined to radon and radium products. The Medical Department of the Atomic Energy Commission has studied the medical applications of isotopes.

Demonstrations of the consideration and use of the Geiger-Müller counter have been given before a number of lay audiences in the Chicago area, and the Council office has cooperated with the Bureau of Health Education in giving public lectures, with the Bureau of Scientific Exhibit in setting up demonstrations, with the Committee on Medical Motion Pictures in reviewing new educational films and with the editorial staff in preparing articles and reviews.

The Council has cooperated with the American Red Cross in the study of artificial respiration.

Report of the Council on Foods and Nutrition

During the past year the Council on Foods and Nutrition has continued to take an active interest in the problem of the contamination of foods by chemical technologic aids. At its annual meeting the Council passed a resolution stating the necessity for more adequate pretesting of all chemicals which might be used on or in foods. Special attention was called to the importance of analytical methods and chronic toxicity tests prior to their being released for general use. This subject was commented on editorially in THE JOURNAL July 2, 1949. The use of surface-active compounds was singled out for special mention in a statement adopted by the Council and published in THE JOURNAL July 2, 1949. It was stated that the use of these compounds can result in the dilution of nutritive values of foods such as bread because an "acceptable" product can be made using less milk, eggs and fat. Information concerning the harmlessness of these agents is regarded as inadequate.

The increase in the number of infant food preparations made to resemble breast milk from a chemical standpoint has resulted in the Council's decision to require more complete evidence of the growth-promoting properties of such products than has been required in the past. All companies producing these preparations have been appraised of this new requirement, and at the present time several clinical studies have been initiated by them. The results of these studies will prove valuable to those members of the profession concerned with the feeding of infants.

The Council recognizes the increasing use of low calory foods in the treatment of obesity and is giving increased attention to the improvement of such products. For example, in the case of water-packed fruits, careful selection of the raw products and the use of modern processing technics can result in an improved product from the point of view of patient acceptability. One of the large packers of such products is cooperating with the Council in this program at the present time.

The Council maintains an active interest in many public health movements which are concerned with food and nutrition. The following examples are representative of the role played by the Council in such movements.

The Council continues to encourage the use of vitamin D milk. The ever increasing number of accepted brands of fresh milk, evaporated milk and whole powdered milk fortified with vitamin D bears witness to the fact that the efforts of the Council in this direction are not in vain. As a direct result of this program, almost all the evaporated milk consumed in this country at the present time is fortified with vitamin D. That the widespread use of vitamin D milk has played an important role in the almost complete eradication of rickets in the United States seems beyond question.

The value of oranges, grapefruit and tomatoes as a source of vitamin C is well known, but it has been established that the canned juices of these fruits may vary widely in vitamin C content. The Council recognizes the importance of making available to the people of the nation dependable sources of vitamin C and toward this end the Council accepts such juices containing high natural levels of vitamin C. The advent of the frozen concentrate has been recognized by the Council as making possible the almost complete retention of the vitamin C occurring in the fresh fruit. At the present time four of the largest selling brands of frozen orange juice concentrates have satisfied the requirements of the Council and have been accepted.

The role of iodine in the prevention of endemic goiter has long been established. The Council continues to encourage all efforts in the education of the public to use iodized salt in its diet.

In addition to keeping the profession informed of the important advances in the field of foods and nutrition, the Council's efforts are directed toward the prevention of false or misleading advertising claims in the promotion of accepted foods. In general, the cooperation of the manufacturers and their advertising agencies has been gratifying. In addition to advertising for accepted foods, the Council also reviews general educational advertising dealing with the nutritional values of groups of foods in which there is no reference to specific brands.

The Council has cooperated with various governmental and non-governmental agencies, such as the Food and Drug Administration, national and local Better Business Bureaus and state and city health departments. The Council is frequently requested to give support to the work of such agencies. However, the Council supplements rather than duplicates the work of these organizations. The Council also has advised other departments at the headquarters offices when they have had problems relating to foods and nutrition.

As usual, members of the Council continue to receive requests to discuss current nutrition topics and related subjects before various scientific and lay groups.

The Council notes with interest the incorporation, under the laws of the State of New York, of the Food Law Institute, which has as its aims the promotion of a better understanding of the food laws and the encouragement of research. A more complete description of this development will appear in the report of the Bureau of Legal Medicine and Legislation, the director of which has been designated as a member of the Lawyer's Advisory Committee of the Institute.

The first Joseph Goldberger Award in Clinical Nutrition was presented posthumously, at the 1949 Annual Session of the American Medical Association, to Dr. Randolph West for his work in identifying vitamin B_{12} and its relation to the anti-pernicious-anemia factor in liver extract. The Council regrets that the untimely death of Dr. West prevented his acceptance of the award personally. However, Dr. West had been notified of his selection as the recipient of this award prior to his death.

The Council requires the full cooperation of the medical profession for its food acceptance program to continue as an important factor in the maintenance of the nation's health.

Report of the Bureau of Investigation

During the year ended Aug. 31, 1949, the Bureau of Investigation handled more than 3,400 inquiries on about 4,100 subjects on the various aspects of quackery and "patent medicine" promotion. About one third of these inquiries came from members of the medical profession. The balance came from lay persons desiring information on particular subjects for their own benefit, from students and teachers as part of their classroom activities, from Better Business Bureaus and from federal and state authorities in pursuance of their regulatory activities under the various laws they enforce.

There appears to be increasing interest on the part of students in the information which the Bureau has to offer on "patent medicines" of all kinds. Many courses in consumer education have as part of their regular curriculum an assignment to make inquiry of the Bureau on this subject.

Interest in specific subjects centered around quackery in cancer and "patent medicine" promotion in the rheumatism and arthritis fields, as well as the widely advertised "reducing plans."

The Bureau contributed six and a half columns of space to THE JOURNAL and contributed material forming the basis for a report on cancer published under the auspices of the Council on Pharmacy and Chemistry, amounting to eleven and a half columns.

For a period of approximately three months the Director's attention was given to assisting in the investigation of facts involved in the preparation for trial of a libel suit brought in Dallas, Texas, against the Association, the Editor of THE JOURNAL and others. The cooperation of Texas doctors was generously given. The trial was concluded in March and a nominal judgment was rendered in favor of the plaintiff. No appeal was taken. Neither the Association nor the Editor was served with process and hence were not parties to the judgment.

The director appeared on two television programs on the subject of mechanical quackery and contributed to two series of radio network shows.

An exhibit on mechanical quackery was well received at the Interim Session held in St. Louis in December 1948 and at the annual meeting of the Southern Medical Association held in Miami, Fla., in October 1948.

Material from the files of the Bureau is constantly being sought by magazine writers, motion picture writers, newspaper reporters and others having need for such information in their own activities.

The Bureau seeks the continued cooperation of all physicians, government agencies and private groups whose interest in the public welfare extends to the realization that now, even more than in the past, there is constant need for the exposure of quacks, cultists and "patent medicine" promoters whose sole motivation is profit, based on deception of the patient or customer.

Report of the Council on Industrial Health

One of the significant events of the past year was the adoption by the House of Delegates of a program for the advancement of medicine and public health, one section of which advocated greater emphasis on industrial medicine and on accident prevention. The Council on Industrial Health has directed its principal efforts toward a practical implementation of this broad policy.

PUBLIC ACCEPTANCE

Improvement in the amount and quality of industrial medicine depends fundamentally on increased public acceptance. Authorization was requested and received to set up some form of regular permanent consultation with labor and management on the assumption that wider support would occur through joint rather than single-handed effort. Several preliminary meetings with representatives of the American Federation of Labor, the Chamber of Commerce of the United States, the Congress of Industrial Organizations and the National Association of Manufacturers have uncovered strong interest. A basic plan for cooperative activity, agreeable to the representatives of these organizations, has been prepared for ratification by the Board of Trustees. Following are the proposed articles of agreement for consideration by the House.

JOINT COMMITTEE FOR THE ADVANCEMENT OF HEALTH IN INDUSTRY

Purpose.—The purpose of the Committee is to contribute to the national well-being through the protection and improvement of the health of employees in commerce and industry by active support of

1. Safe and healthful working conditions through the application of the principles of prevention.
2. Positive health promotion through medical appraisal, adequate records, health education and counseling.
3. High quality medical and rehabilitation services for the industrially disabled.
4. Improved administrative methods.

5. Research and investigation.
6. Employer-employee cooperation at the plant level to attain these ends.

Organization.—1. Membership. The membership of the Committee shall consist of one staff member and one member at large to be designated by

a. The American Federation of Labor.
b. The American Medical Association.
c. The Chamber of Commerce of the United States.
d. The Congress of Industrial Organizations.
e. The National Association of Manufacturers.

Other agencies or groups may be added to full or advisory membership as agreed to by the original constituents.

2. Officers. A chairman, representing the constituents in rotation, shall preside over the meetings. A secretary shall be elected annually to keep the records, prepare agenda and to conduct other routine affairs.
3. Subcommittees and Consultants. Subcommittees and consultants may be appointed for the consideration of special problems.
4. Meetings. The determination of the time and place of the next meeting shall be the last order of business at each session.

Support.—Agreed on projects of the joint committee shall be carried out and supported as each constituent organization shall decide in accordance with its own established policies and procedures.

Procedure.—1. Ratification. Actions of the Committee will be subject to ratification by each constituent organization.

2. Scope. The Committee will consider and make recommendations regarding
   a. Scope, distribution and administration of industrial health services.
   b. Maintenance of high professional standards.
   c. The promotion of similar activities by appropriate groups in regional, state and local areas.
   d. The Annual Congress on Industrial Health of the American Medical Association.
   e. The stimulation of special studies in the technical, social and economic aspects of industrial health services.

PROFESSIONAL RELATIONS

As the demand for medical service in industry grows, it is important that the medical profession be prepared to meet it. Two major activities have been stressed by the Council—adequate training and professional organization. During the past two years, a member of the Council staff has been actively engaged in assessing the educational resources for industrial medicine in the United States and Canada at the undergraduate, postgraduate, residency and fellowship levels. His findings, on the whole, show commendable improvement. Several reports descriptive of the current educational picture are in the final stages of preparation.

In recent months the Council has received more inquiries from the committees on industrial health in the state and county medical societies than at any previous time. Some of these committees are newly formed, and in some instances it is a new chairman of a well established committee who is seeking to develop a more active program. All want to know how to promote industrial health. A number of outstanding industrial health conferences have been sponsored by these groups all over the country. This record of spontaneous constructive action is the most encouraging feature of the Council's program. As a result, a census of all committees on industrial health is being taken which, when completed, will provide the means for supplying these committees with a series of recommended practices based on the best and most successful current programs.

In the same way, the industrial medical interests of specialty organizations will be emphasized in order that the requirements of industry may be better understood by the major consulting specialty groups—surgery, dermatology, ophthalmology and internal medicine.

To promote better integration within the American Medical Association and with closely allied organizations, the Editor of the *Archives of Industrial Hygiene and Occupational Medicine,* the delegate from the Section on Preventive and Industrial Medicine and Public Health, the Chief of the Division of Industrial Hygiene of the United States Public Health Service and the President of the American Association of Industrial Physicians and Surgeons have been appointed as ex officio members of the Council.

INDUSTRIAL NURSING

Some years ago the Council prepared "Standing Orders for Nurses in Industry" which were recommended to the profession at large as guides to practical physician-nurse relations in industry. Unfortunately, these orders have come to be regarded as substitutes for the personally devised and signed instructions of individual plant physicians and in certain areas have been used as subterfuges by nurses who engage in procedures for which they are not professionally qualified. Several prosecutions of nurses for violation of medical practice acts are of serious concern to the industrial medical and industrial nursing professions, as well as to industry itself. The entire matter of standing orders is currently under investigation by a joint committee whose findings will be used by the Council in its proposed revision of this material.

ACCIDENT PREVENTION

Several recent resolutions of the House of Delegates have enunciated the great concern of the medical profession over the growing menace of accidents. These resolutions express the intention of the American Medical Association to cooperate with all agencies interested in accident control. The Secretary of the Council participated in the President's Conference on Industrial Safety in the Spring and placed on record with the Bureau of Labor Standards the American Medical Association's viewpoint. It is expected that this program, sponsored by the President through the United States Department of Labor, will come to be an important annual function.

Since the National Safety Council is the principal independent agency in the field, these same resolutions were submitted to its president and managing director. It has been determined that although many departments in the American Medical Association are concerned, it will be least confusing to channel all contacts through the Council on Industrial Health at the outset. It has been agreed also that a joint planning committee made up of three representatives from each group will meet to determine ways in which the doctor and the safety engineer can reduce accidents in industry, in the home, in the school and on the highway.

SOCIAL IMPLICATIONS OF INDUSTRIAL MEDICINE

In lieu of wage increases, present trends in labor-management negotiations emphasize welfare benefits, many of which involve the medical profession to a greater or lesser degree. Certainly the physician in industry will find his sphere of action and influence considerably broadened. It is doubtful that the medical interest involved is clearly realized, even by the profession itself. Two projects are expected to define the nature of and demand for medical participation in industrial welfare programs. The Council on Medical Service has appointed a committee to investigate over-all medical services for industrial workers and has invited the Council on Industrial Health to nominate members to this committee. In addition, it will consider cash sickness insurance with its attendant problems of certifying the nature and probable duration of nonoccupational illness or injury. The Council on Industrial Health, the Board of Trustees and the House of Delegates all have approved the general policy of cooperative industrial health planning by management, labor and medicine, provided scientific and ethical standards are maintained. It is the Council's belief that this passive approval should be changed to active insistence. At all events, a definite policy is urgently needed.

The industrial physician also is assuming much greater importance in plant personnel and industrial relations. These have profound implications in our industrial civilization and involve also the professional skills of the sociologist, anthropologist and psychologist. The Council strongly feels the need for dependable advice along these several lines and is setting up a group of consultants capable of qualified consideration of these matters and with ability to carry on a program of integrated education and action.

WORKMEN'S COMPENSATION AND REHABILITATION

Workmen's compensation administration has taken on added significance by reason of recent legislation in New York State which assigns responsibility for unemployment compensation for nonoccupational disability to the industrial commission rather than to the state unemployment division. All state medical societies have been notified of the expert assistance in workmen's compensation problems now available through consultants attached to the Council on Industrial Health. The number and diversity of inquiries already received amply testify to the usefulness of this activity. A clearer understanding of the major issues in this important field has developed through professional contacts, correspondence, attendance at meetings and questionnaires. There is universal agreement that great progress can be made by setting up some form of regular consultation between the state medical societies and the industrial commissions. To facilitate such consultation, records of successful administrative and medical procedure are being collected as a means for joint consideration. Liaison with the International Association of Industrial Accident Boards and Commissions and with the American Bar Association is planned and should promote better common understanding of medical, legal and administrative problems.

Although major responsibility for rehabilitation affairs rests with the Council on Physical Medicine and Rehabilitation, the Council on Industrial Health retains a major interest in those phases which deal with reemployment of the disabled. During the year, the Secretary of the Council was appointed a member of the Executive Committee of the President's Committee on National Employ the Physically Handicapped Week, in addition to acting as chairman of the Medical Subcommittee. A recent government appropriation gives assurance that this agency will conduct a vigorous campaign to give the handicapped not preferential treatment but equal opportunity for jobs they are capable of performing.

Report of Council on National Emergency Medical Service

This report of the activities of the Council on National Emergency Medical Service covers the period from Oct. 1, 1948 to Oct. 1, 1949.

APPOINTMENT OF CIVILIAN MEDICAL ADVISORY COMMITTEES TO THE NATIONAL SECURITY RESOURCES BOARD AND THE SECRETARY OF DEFENSE

Late in 1948 Civilian Medical Advisory Committees were appointed to the National Security Resources Board and Secretary of Defense after the House of Delegates of the American Medical Association had several times adopted resolutions recommending the appointment of such committees. Adequate civilian representation at the highest policy level of the government in connection with mobilization and utilization of medical personnel was finally achieved. Because of changes of personnel in the National Security Resources Board and some confusion relative to its proper sphere of responsibility, the Civilian Medical Advisory Committee to this Board has found little constructive work to perform. The Advisory Committee to the Secretary of Defense, on the other hand, has held several meetings and from these meetings have come many fundamental recommendations whose adoption by the armed forces have resulted in increased economy and efficiency in the utilization of medical personnel.

PROCUREMENT OF MEDICAL PERSONNEL FOR THE ARMED FORCES

An important program of the Council this year has been its cooperation with the armed forces in the drive to procure additional medical personnel. All of the outlets of the American Medical Association, including THE JOURNAL, the Secretary's Letter and special mailings to state and county medical societies and to individual physicians in selected age groups, have been utilized to intensify the procurement program. Concurrently with this program, the armed forces themselves have conducted a vigorous educational and publicity campaign. This campaign and the more economic utilization of medical officers have resulted in some improvement, but there still remains a definite need for additional medical and related personnel in the Army, Navy and Air Force.

ELEVATION OF POSITION OF THE SURGEON GENERAL OF THE ARMY

On recommendation of the Council, the House of Delegates adopted resolutions urging that the position of the Surgeon General of the Army be elevated to a position compatible with its importance and guaranteeing direct access to the Chief of Staff. The Council is pleased to report that action was taken by the Army during the last year to effect this change.

ESTABLISHMENT OF THE OFFICE OF MEDICAL SERVICES IN THE OFFICE OF THE SECRETARY OF DEFENSE

A significant advance in the medical organization of the armed services was made when a Medical Services Division was adopted within the Office of the Secretary of Defense. The appointment of Dr. Richard L. Meiling, a member of the Council on National Emergency Medical Service, as Deputy Director of the new division, with arrangements for his assumption of the Director's position a few months later, has already been reported to the House of Delegates by the Council. On Oct. 1, 1949, Dr. Meiling was officially appointed Director of the Office of Medical Services. Notwithstanding the pressure of Dr. Meiling's new duties, he will continue to serve as a member of the Council.

POINT SYSTEM—PUBLIC LAW 810

After the passage by the House of Delegates of resolutions in connection with the determination of point credits required by medical corps reserve officers for the completion of a satisfactory year of federal service under Public Law 810 (80th Congress), copies of which were sent to the President and selected members of the government and Congress, action was finally taken by the 81st Congress allowing credit for satisfactory service to extend to July 1, 1949 rather than July 1, 1948 as originally enacted.

PROVISION OF FELLOWSHIP AND OTHER PRIVILEGES TO THE NEWLY ESTABLISHED UNITED STATES AIR FORCE

Amendments were offered to the Constitution and By-Laws at the June 1949 session to effect changes which will give to the medical officers of the United States Air Force the same privileges as those now provided officers of the other forces. The final adoption of these amendments will be recommended to the House of Delegates at the December 1949 session.

MEETINGS AND CONFERENCES

The semiannual meeting of the Council on National Emergency Medical Service was held at American Medical Association headquarters March 21, 1949. Representatives attended from medical associations and societies from Arizona, Arkansas, Connecticut, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, New Jersey, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, Virginia, Washington and Wisconsin, and there were guests from governmental and private agencies. An important meeting of the Council will be held in Washington, D. C., on December 4, attended by its consultants and invited guests, to consider the program of the Council for the coming year and particularly to make plans for the orderly mobilization and effective distribution of medical and related personnel, in the event of a national emergency or war. A report of this meeting will not be presented until the June 1950 meeting of the House of Delegates, but it is possible that resolutions may be offered for the consideration of the House at the December meeting.

Bureau of Legal Medicine and Legislation

Following the practice of the last several years, this report will not contain detailed references to the many bills of medical interest that have been introduced in the 81st Congress. The report of the Washington Office will advise the House of Delegates of the more important of such measures. The Bureau has, however, kept currently informed on these bills and has received promptly copies for study. It maintains a complete file of them.

Much correspondence has been carried on with state associations concerning particular measures and the replies made to inquiries have been based on principles previously established by the House with respect to federal participation in the field of health and on actions taken by the Board of Trustees and by the committee that has been created to give prompt consideration to measures that are from time to time introduced in Congress.

In addition, the Bureau has collaborated fully in assembling material for use by witnesses who have appeared before Congressional Committees to acquaint the members of such committees with the viewpoints of medicine. On request, too, detailed analyses have been prepared of the more important bills and these analyses have been published in THE JOURNAL. As an example, there was published in THE JOURNAL for April 9, 1949, comments on S. 1456, commonly referred to as the Hill bill and in THE JOURNAL for May 7, 1949, a summary of the provisions of S. 1679, commonly referred to as the Thomas or Administration bill.

At the request of the editor of the American Bar Association journal, a statement was prepared on the principal features of the four major bills pending in Congress proposing health programs and this statement was published in the September issue of that journal.

FEDERAL FOOD, DRUG AND COSMETIC ACT

In the report of the Bureau submitted to the House of Delegates at the St. Louis meeting, reference was made to the creation of a Committee on Food, Drug and Cosmetic Law by the American Bar Association. This committee has been divided into subcommittees, one of which is the Subcommittee on the Drug Law. The purpose of this subcommittee is to make studies of the Federal Food, Drug and Cosmetic Act, as it relates to drugs, to ascertain what changes are needed to make it a more effective instrument within constitutional limitations. The Director of the Bureau is a member of this subcommittee.

There have been referred to the subcommittee for consideration, by the chairman of the whole committee, the following items:

(1) A suggestion that the federal act be amended to authorize the administrative requirement of a pretesting certification for any new drug, on the basis of evidence adduced at an appropriate public hearing open to the introduction of opposing evidence and subject to a review by the courts, and

(2) A suggestion that the federal act be amended to eliminate warnings from the retail labeling of prescription drugs, except when such warnings are directed by the prescriber, to define the scope and conditions of a "prescription legend" labeling of drugs and to provide that the list of drugs subject to this labeling requirement shall be established on the basis of an appropriate public hearing and a due court review.

There has been no meeting of this subcommittee, but its chairman, Mr. James F. Hoge of New York City, has requested individual members to submit preliminary reactions to the suggestions now before the subcommittee. This the Director of the Bureau has done, his comments being based in the main on a most helpful memorandum from the Secretary of the Council on Pharmacy and Chemistry, Dr. Austin Smith. Indications are that the subcommittee will hold its initial meeting at an early date, possibly in January of next year.

FOOD LAW INSTITUTE, INC.

A movement that presages greater consideration of the existing law relating to food was initiated with the formation of an organization incorporated under the laws of New York, March 16, 1949, under the corporate name of the Food Law Institute, Inc. The organization was created and will be initially financed by representatives of the food industry. Its general purposes have been summarized briefly as follows: (1) To promote a due teaching and study of the United States food law and of valuable research publications on it, for educational purposes and to advance the general public welfare; and (2) to do so as a public organization which is dedicated to a constructive operation and development of this law in its fundamental conception of a social law essential to safeguard the national health and economy.

There will be three classes of members. Founder members will consist of food and related manufacturers who financially support the Institute and who are elected by the Board of Trustees as such members. Sustaining members will be others who financially support the Institute and are elected by its Board of Trustees as such members. Public members will be representatives of the public at large who may or may not financially support the Institute and who are elected by the Board of Trustees as such members.

An initial major project of the Institute has been to underwrite a food law chair at the New York University School of Law. This chair will be operated at a post-graduate level and on the seminar basis in part. Fellowships will be established. Desirable post-graduate students from different sections of the country will be sought to attend the course offered and such students will participate in the research work of the chair. In addition, the Institute will develop a program to stimulate coordinated teaching and research in the food law by other leading law schools and possibly by medical, public health and business schools. It is hoped thus to make the law generally known to those who must deal with it and to train lawyers expert in this law for industry and public service who understand its basic philosophy and true relation to our free institutions.

The Institute will also develop a broad program for constructive research studies of the food law and a systematic issuance of guiding or informative publications on it. To function in connection with the Institute, there has been created a lawyers' advisory committee and the Director of the Bureau has accepted an invitation to be a member of that committee. The first meeting of the committee will be held in New York City, November 16.

In connection with this development the Bureau has sought the counsel of the Secretary of the Council on Foods and Nutrition, Dr. James R. Wilson, and will continue to do so.

CERTIFICATION OF CHECKS IN PAYMENT OF FEDERAL NARCOTIC TAX

As has been previously reported by the Bureau, the tax imposed on physicians by the Harrison Narcotic Act is payable by stamp and under existing law collectors of internal revenue are not authorized to accept uncertified checks for the annual tax of $1 payable by physicians who register under the federal law. This certification requirement has brought forth protests from a number of individual physicians and from the House of Delegates itself.

The Bureau has discussed the matter on a number of occasions with the Chief of Staff of the Joint Committee on Internal Revenue Taxation and with the office of the Commissioner of Internal Revenue. The certification requirement can be eliminated only by a change in existing law. Such a change was suggested in a bill introduced June 2, 1949, by Representative Doughton, H. R. 4965, apparently at the request of the Treasury Department. This bill contained a number of administrative changes to facilitate the work of the Bureau of Internal Revenue. Concerning the section of the bill dealing with the certification requirement, Section 10, a statement prepared by the Treasury staff and the staff of the Joint Committee on Internal Revenue Taxation, dated June 7, 1949, had this to say:

"Existing law allows collectors to accept uncertified checks in payment of taxes, but requires that checks tendered in payment for internal-revenue stamps be certified. This requirement as to stamps causes additional work for the Bureau and inconvenience and vexation to taxpayers. Stamps to be used in payment of taxes are usually sold to financially responsible persons and organizations, and therefore the revenues would not be adversely affected by liberalizing the law in this respect. Sections 10 of the bill would thus authorize the Commissioner to prescribe conditions under which collectors may accept uncertified checks in payment for stamps.

"In addition, present law does not authorize the acceptance of checks drawn on banks or trust companies organized in the possessions or Territories. The section would also remedy this defect by bringing these banking organizations within the scope of the statute."

No action has been taken by the House of Representatives on this bill, as such. Some of the sections contained in it, however, were added by the Senate Committee on Finance to another House bill, H. R. 5086, but not the section relating to check certification, the House accepted the Senate amendments and the bill has become a law.

The Bureau will continue its efforts to have eliminated this requirement which constitutes a petty annoyance annually to many physicians.

OSTEOPATHY IN KANSAS

Reference was made in the report of the Bureau submitted to the House of Delegates at its St. Louis meeting last November to litigation brought by certain osteopaths practicing in Kansas to challenge the validity of the Kansas osteopathic practice act. These osteopaths filed a complaint in the United States District Court of Kansas in October 1947 to restrain the governor and attorney general of Kansas from enforcing certain sections of that act. The same provisions of the challenged law had previously been held by the State Supreme Court to limit the practice of osteopathy to a practice of healing without the use of drugs as remedial aids or operative surgery. Trial was had in April 1948 before a three judge federal court pursuant to provisions of the United States Judicial Code. Highlighting the trial was the volume of evidence, gathered through considerable research, offered on behalf of the governor and attorney general to prove that the osteopathic concept of healing, when the Kansas act was passed in 1913, did not embrace drugs as therapeutic remedies or operative surgery. Quotations from the writings of the founder of osteopathy, from catalogs and curricula of its schools and from the journal of the American Osteopathic Association were abundant. In November 1948 the court announced its decision holding the Kansas osteopathic act valid, as construed by the State Supreme Court, refusing to enjoin its enforcement and dismissing the action at the cost of the plaintiffs. The usual post-trial motions were filed, argued and denied. Despite plaintiffs' announced intention to appeal to the Supreme Court of the United States from any decision adverse to them, no step to perfect such appeal was taken within the time limit prescribed by law and the litigation is therefore terminated. The legal effect of the case was summed up by the Chief Judge of the court as follows: "I repeat, they [osteopaths] cannot broaden the license to practice osteopathy in Kansas by the simple expedient of varying or expanding their curriculum. . . . It is my conclusion that the [osteopathic practice] statute, as construed by the Supreme Court of Kansas, is valid."

ABSTRACTS OF COURT DECISIONS OF MEDICOLEGAL INTEREST

During the year the Bureau has continued to supply abstracts of court decisions of medicolegal interest for publication in THE JOURNAL. A few of the more important decisions warrant brief emphasis in this report.

The district court of appeals of California, in a decision later affirmed by the Supreme Court, held that, under the circumstances and conditions disclosed by the evidence, the general rule is that "as a part of the requirements which the law exacts of general practitioners of medicine and surgery, or other schools of healing, if, in the exercise of the care and skill demanded by those requirements, such practitioner discovers, or should know or discover, that the patient's ailment is beyond his knowledge or technical skill, or ability or capacity to treat with a likelihood of reasonable success, he is under a duty to disclose the situation to his patient or advise him of the necessity of other or different treatments."[1] The same court in another decision held that testimony relating to chemical tests to determine the amount of alcohol in the defendant's blood was admissible in evidence even though the blood sample was obtained while the defendant was nearly unconscious and was suffering from shock and cerebral concussion.[2] The Supreme Court of Arkansas denied the right of the State Board of Chiropractic Examiners to waive the requirements of the basic science act in granting reciprocity certificates.[3] In a Kentucky case the Court of Appeals upheld the right of a school board to enforce a resolution requiring children to be vaccinated against smallpox or else be excluded from the city schools.[4] A program of medical care established by the State Board of Health of Maryland was held by the Court of Appeals of that state not to include services furnished by chiropractors.[5] A requirement that membership on a hospital staff be conditioned on membership in the county medical society was held unreasonable by the Supreme Court of Indiana.[6] The Supreme Court of Colorado held it to be an unreasonable exercise of the police power for a statute to provide for cancellation of a physician's license for three years' nonpayment of an annual registration fee and to require as a condition precedent to reinstatement of the license that the physician qualify for licensure under the statutory requirement obtaining at that time rather than those in effect at the time the original license was issued. In this case the requirements had been considerably increased.[7] The Supreme Court of Washington held that the practice of obstetrics and the administration of ether or a hypodermic are not permitted to sanipractors.[8] The Supreme Court of Oklahoma held that the system of grading medical schools by the Association of American Medical Colleges applicable to schools within the United States could not be applied to medical schools located outside the grading area.[9]

CORPORATE PRACTICE OF MEDICINE

There was submitted to the House of Delegates at the Atlantic City Session a summary of a study that had been made by the Bureau on the corporate practice of medicine. This study was made for the Committee on Hospitals and the Practice of Medicine, of which Dr. Elmer Hess of Pennsylvania was Chairman. The complete study is now available in printed form and may be obtained from the Bureau. It includes a reference to the pertinent provisions in medical practice acts, to the laws under which incorporation may be effected, to decisions of courts and to opinions rendered by state attorneys general.

THE PROFESSIONS OF MEDICINE AND LAW

The Bureau has participated during the year in joint meetings of local medical and bar associations at Galesburg and Bushnell, Illinois, and at Cumberland, Maryland. All three meetings were very well attended by lawyers and physicians and much interest was evidenced in the discussions of problems of mutual interest. Much value results from such meetings and the Bureau takes this opportunity to urge that state and county medical societies take the initiative in arranging periodically meetings with the state or local bar associations.

There was recently submitted to the Board of Managers of the Chicago Bar Association a report by the Committee on Federal Legislation of that Association concerning pending legislation in the Congress proposing to federalize the practice of medicine. In approving this report, July 14, 1949, the Board of Governors prepared a preliminary statement to the report which is of such significance as to warrant its reproduction here. That statement emphasizes admirably the mutuality of interest of physicians and lawyers in any proposal to subject either profession to federal direction and control. This is what the Board of Managers said:

"In surveying the facts brought forward in this report, and the general considerations urged both for and against the proposed legislation, the Board was of the opinion that some of the implications of many of the steps proposed are so significant that they cannot be lightly passed over.

"The medical profession and the legal profession are greatly divergent in many aspects; nevertheless, they have much in common. The aims of one are to prevent and cure mental or physical sickness. The object of the other is to safeguard the rights of persons and if they are unjustly infringed, to obtain redress, both through the practicing lawyer and the lawyer when he becomes a judge.

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[1] Sinz v. Owens, 196 P.(2d) 52; 205 P.(2d) 3.

[2] People v. Tucker, 198 P.(2d) 941.

[3] Lindquist v. State, 213 S.W.(2d) 895.

[4] Mosier v. Barren County Board of Health; Stuart v. Same, 215 S.W.(2d) 967.

[5] Crider v. Cullen, 63 A.(2d) 618.

[6] Hamilton County Hospital v. Andrews, 84 N.E.(2d) 469.

[7] Lipset v. Davis, 203 P.(2d) 730.

[8] State v. Houck, 203 P.(2d) 693.

[9] Application of State Board of Medical Examiners In Re Nathan, 206 P.(2d) 211.

"Both professions have been governed since ancient times by codes of ethics peculiar to themselves and orginating only from each profession. 'The Hippocratic Oath,' which stemmed from Hippocrates, was a voluntary oath, itself containing a code of ethics which may well guide men of medicine for all time. The canons of ethics of the legal profession were likewise developed by lawyers alone for their guidance and self-discipline. Both classes of activities involve specialized learning and great responsibility. Neither is primarily commercial in its nature, they are fundamentally based upon service.

"The best development of both skills has been apart from governmental action or interference. The law schools and the medical schools, in the final analysis, produce lawyers and doctors, and no governmental official in a free society intervenes.

"It is our considered opinion that the invasion of government into the practice of medicine presages a similar intrusion into the practice of law. It has been said that the tide of governmental management is resistless, that one may as well become reconciled to the fact of ever-increasing authoritarian regulation. That there has been such a movement is no reason why it should not now be stemmed, and if possible, reversed. Lawyers have always been the first to preserve the rights of the individual, and those things which time has shown are valuable in our way of life.

"In a recent number of Harper's Magazine, there is a quotation from an interview with a Nazi prisoner of war who said: 'The enemy we could not buy or break was the aristocratic individualism of the ordinary citizen of the West. If only we had hanged—as Himmler was always itching to do—all those outdated legalists, with their squawk about moral dignity, then our movement would have swept the world.'

"It has become quite current among enthusiasts for regimentation to belittle those who scrutinize the means adopted for an end as 'legalistic.' If to be legalistic is to preserve liberties, if to be legalistic is to halt the aggrandizement of governmental bodies, then it should be to the honor of lawyers to be legalistic.

"Half a century ago in the State of Illinois, the Supreme Court proclaimed the independence of the profession of law from the legislature as well as the executive (In re Day, 181 Ill. 73). The development of the profession in England was there fully discussed, and the significant fact brought out that the Inns of Court were voluntary societies to which mandamus would not lie, but that the ancient and usual way of redress for any grievance was by appealing to the judges.

"The imposition by central authority of a new body of administrators, hearing officers, clerks, sub-clerks, and civil servants of every variety to administer, govern, and regulate the practice of medicine, would be a calamity. The same zealots who have recently been clamoring for the fingerprinting of every human being in this country will very soon be urging the carrying and exhibition of a license card by all physicians and their patients, stamped, endorsed, countersigned and certified by numerous authorities, before the patient can receive and before the physician can administer treatment.

"There is a limit to the load of regulations, orders, directives, reports, and the mountains of miscellaneous paper work with which the ordinary citizen has already become afflicted. There is a breaking point beyond which plunder in the pseudo-respectable guise of taxation becomes unbearable. To add to this the enforced paralysis of both ancient fellowships is unthinkable. The organized push for further regimentation must be stopped."

ACADEMY OF FORENSIC SCIENCES

During the last several years renewed consideration has been given to the creation of a national medicolegal association. Reference was made to this development in the report of the Bureau submitted to the House of Delegates at the St. Louis meeting. A meeting of a steering committee to consider such an organization was held in New York October 18, last year, and the chairman of the Association's Committee to Survey the Relationship of Medicine and Law, Dr. Alan R. Moritz, and the Director of the Bureau accepted membership on the committee and attended the meeting. After considerable discussion, it was the consensus that there was a need for the creation of a national organization devoted to matters of medicolegal significance and the committee voted to sponsor such an organization under the name of the Academy of Forensic Sciences.

Another matter considered by the committee related to the desirability of sponsoring at this time a national publication for the dissemination of information on developments in the field of the forensic sciences. Communications were read from two well known publishers advising against the starting at this time of a journal of this nature and the committee decided to accept the advice of these publishers. Representatives of the *Journal of Criminal Law and Criminology* indicated that any important material developed by the Academy of Forensic Sciences would be acceptable for publication in that journal and the committee decided to accept this offer.

A number of subcommittees were appointed to effect the organization of the Academy and these committees are scheduled to make reports at a meeting to be held next January in Chicago, at which it is contemplated that a number of important papers will be presented.

NEW COURSES IN LEGAL MEDICINE

Tulane University has this fall inaugurated a new law-science program to bring about an effective integration between the fields of law and medicine on the graduate and undergraduate levels. The medical school course in legal medicine is designed to acquaint students with the chief connections in which medical science may help in the administration of justice and the solution of social problems. The law school course in advanced evidence will deal with the functional use of the rules of evidence and the functional use of science in proof in civil and criminal litigation. The courses in both the law school and the medical school will be directed by Dr. Hubert Winston Smith, former Professor of Legal Medicine at the University of Illinois.

LAWS RELATING TO AUTOPSIES, CORONERS AND MEDICAL EXAMINERS

Laws were enacted during the year in a number of states relating to autopsies and to the office of coroner and medical examiner. A new Arizona law provides that when any person has knowledge of the death of a human being in a case in which no physician was in attendance at the time of death, the person must immediately report this fact to the nearest peace officer, who shall cause an investigation to be made and report the results of such investigation to the coroner. The coroner may then direct the medical examiner or any other qualified physician to make such examination of the body as may seem necessary to determine the cause of death.

A prior Connecticut law permitted a coroner to determine whether or not a death was caused by the criminal act, omission or carelessness of another and to determine whether or not the cause of death was so obscure as to warrant an autopsy. A 1949 amendment requires both the coroner and the medical examiner to make such finding. Another Connecticut law authorizes the medical examiner along with the coroner to order an autopsy and requires that such autopsies, whether ordered by the coroner or the medical examiner, shall be performed only by certified pathologists. Any physician duly licensed to practice medicine in the state who is "a member in good standing of the American board of pathologists" shall be entitled to certification as a certified pathologist.

Prior Maryland laws have permitted the appointment of a chief medical examiner and two assistant medical examiners. A new law authorizes and directs the appointment of a toxicologist as well. Existing New York laws relating to Westchester County and permitting the appointment of a medical examiner therein were amended so as to grant the option of appointing a medical examiner or a pathologist-medical examiner. A third New York law which also relates to the County of Westchester would permit certain cities, towns, villages and special districts therein to establish a county laboratory district under the direction of the pathologist-medical examiner. Such examiner must be a pathologist and microscopist experienced in his profession and meeting the minimum qualifications of professional and administrative education and experience set forth by the public health council. A Rhode Island law amends the existing law relating to medical examiners by stating the qualification of such medical examiner in more detail. The chief medical examiner must, for example, be a doctor of medicine, qualified in pathology, and having had at least one year of medicolegal training. All assistant medical examiners or county medical examiners must be doctors of medicine.

In California a new law makes it a misdemeanor for any person to perform an autopsy on a dead body without having first obtained the written authorization of the coroner or other authorized public officer or of the person who has the right of disposition of the body. A new Kansas law authorizes a county coroner, in instances in which he feels that an autopsy should be made of the body of some deceased person, to direct a physician or surgeon to perform such autopsy, unless the coroner himself is a physician or surgeon. In such case he may perform the autopsy himself. The law also provides that an autopsy may be performed on the body of any deceased person by a physician or surgeon who has been authorized to do so in writing by the decedent during his lifetime or by the decedent's surviving spouse or by an adult child, parent, brother or sister of the decedent. A Montana law authorizes autopsies on dead bodies in cases where dissection, autopsy or post-mortem examination is directed or authorized by the last will and testament of the deceased and also in cases where the husband, wife or next of kin shall in writing authorize such an examination for the purpose of ascertaining the cause of death. All such autopsies and post-mortem examinations must be performed by a physician or surgeon duly licensed by the State Board of Medical Examiners. A Wisconsin law provides that consent for a licensed physician to conduct a post-mortem examination shall be deemed sufficient when given by whichever one of the following has assumed custody of the body for the purposes of burial: father, mother, husband, wife, child, guardian, next of kin or a friend or person charged by law with the responsibility for burial.

The Bureau continues to cooperate with the Committee to Study the Relationship of Medicine and Law in its efforts to promote a modernization of the law relating to coroners. During the year the Chairman of that Committee, Dr. Alan R. Moritz, and the Director of the Bureau had a conference and much correspondence with the Chairman of the Council of the National Municipal League, Mr. Richard S. Childs, who has suggested that the organization he represents desires to assume as a part of its activities more active participation in the development of adequate and scientific procedures to disclose the causes of deaths occurring under suspicious circumstances.

The National Municipal League will hold a National Conference on Government in St. Paul, Minnesota, November 28-30, of this year. In connection with this conference, Mr. Childs has planned a symposium on a proposed model state medical examiner law. Dr. Moritz and the Director of the Bureau have been invited to participate in this symposium.

STATE LEGISLATION IN GENERAL

A summary of state laws of interest to physicians enacted during 1949, prepared by the Bureau, will be published in The Journal in the near future. Reference is here made to some of the more important enactments.

Socialized Medicine.—During the year ten states adopted either joint or simple resolutions petitioning the Congress not to enact any law which would provide for compulsory health insurance: Alabama, Arkansas, Delaware, Florida, Maryland, Michigan, Nebraska, Tennessee, Texas and Utah. Another state, Washington, by a simple House resolution commended the President "for his courageous fight in behalf of the health of the people."

Premarital and Prenatal Laws.—Premarital examination laws were enacted in Georgia and Texas. Such laws have been enacted in thirty-nine states. Prenatal examination laws were enacted in New Mexico, North Dakota and Texas. Forty-one states have enacted laws of this kind.

Basic Science Acts.—A new basic science act was passed in Texas, bringing the total to eighteen states, the District of Columbia and Alaska. An amendment to the Arkansas basic science act exempted resident practitioners of chiropractic licensed prior to March 22, 1948 from its provisions. Prior to this date, apparently, the State Board of Chiropractic Examiners had issued reciprocity certificates to applicants therefor without first requiring them to present a certificate from the Board of Examiners in the Basic Sciences. It was to validate these licenses which the State Supreme Court had held to have been unlawfully granted that the legislature amended the basic science act as indicated.

Other Laws Relating to Limited Practitioners.—A chiropractic examining board was created in Texas. By this law, chiropractic was defined as the employment of objective or subjective means, without the use of drugs, surgery ,roentgen therapy or radium therapy, for the purpose of ascertaining the alinement of the vertebrae of the human spine ,and the practice of adjusting the vertebrae to correct any subluxation or misalinement. In Nevada chiropractic was redefined to mean the science of palpating and adjusting the articulations of the human spinal column by hand only. A Maryland law prohibits chiropractors from practicing obstetrics.

A state board of naturopathic examiners was created in Texas. Naturopathy was defined as "that philosophy and system of healing art embracing prevention, diagnosis, and treatment of human ills and functions by the use of several properties of air, light, heat, cold, water, manipulation with the use of such substances, nutritional as are naturally found in and required by the body, excluding drugs, surgery, roentgen and radium therapy, and the use of x-ray equipment."

An amendment to the Arizona osteopathic act permits osteopaths to practice major surgery after having two years of surgical training in a hospital approved by the state osteopathic board of registration and examination in medicine and surgery. A Wisconsin law provides that osteopathic and medical applicants shall be given the same examination in all subjects and issued licenses authorizing equal rights.

Washington created an examining committee for physical therapists. The new law defines physical therapy as the treatment of any bodily or mental condition of any person by the use of the physical, chemical and other properties of heat, light, water, electricity, massage and therapeutic exercise and posture and rehabilitation procedures. The use of roentgen rays and radium for diagnostic and therapeutic purposes and of electricity for surgical purposes, including cauterization is prescribed. A physical therapist is declared to be a person who practices physical therapy, as defined, under the prescription, supervision and direction of a person licensed to practice medicine and surgery.

Medical Practice Acts.—Arizona, Idaho, Nevada, South Dakota and West Virginia enacted general revisions of their existing medical practice acts. The South Dakota revision creates a composite state board of medical and osteopathic examiners. This board, one member of which must be an osteopath, will examine all applicants in the same manner except that medical applicants will be examined in the practice of medicine and osteopathic applicants in the practice of osteopathic medicine. Licenses must state whether the licensee is permitted to practice medicine and surgery or osteopathic medicine and surgery. In addition to other changes mentioned elsewhere in this report, the Arizona revision provides for a licensing board composed of physicians only. The prior board had osteopathic representation. The Idaho revision provides for a separate state board of medicine and defines the term "practice of medicine" in a more detailed manner than did the prior law. The Nevada revision contains provisions for the examination and licensure of limited practitioners. The West Virginia revision created a composite board with chiropody and chiropractic representation, provided for the biennial registration of licentiates and provided regulations for the examination and licensure of chiropodists and chiropractors. Arizona, Idaho, Nevada and Pennsylvania now authorize the use of the injunctive process to restrain the unlicensed practice of medicine. The new South Dakota law also permits the board to grant temporary licenses for a period not to exceed four years on a finding that an urgent need exists in any part of the state. The license will permit practice only in the particular area designated. California and Oklahoma also will now permit the issuance of temporary certificates, Oklahoma for residency purposes and California for service in state institutions under the Department of Corrections. In relation to the licensing of foreign graduates, California by a 1949 law authorized its board of medical examiners to disapprove a foreign medical school if the instruction therein was not equivalent to that required by the medical practice act and Maryland provides that foreign schools must have standards equivalent to those defined by "the Association of American Medical Colleges or the Intercollegiate Committee of the American Institute of Homeopathy" so far as "entrance requirements, standard of education and requirements for graduation" are concerned.

Ohio became the last state to exempt Christian Science practitioners from the provisions of the medical practice act by providing that "the treatment of human ills through prayer alone by a practitioner of the christian science church, in accordance with the tenets and creed of such church, shall not be regarded as the practice of medicine, provided that sanitary and public health laws shall be complied with, and that no practices shall be used which may be dangerous or detrimental to life or health and that no person shall be denied the benefits of accepted medical and surgical practices."

Rebates.—In Arizona, California and Washington new laws declare it to be a misdemeanor, or unprofessional conduct, for a licentiate to accept rebates of any kind as compensation for referring patients to any person, firm, association or corporation.

Prepayment Medical and Hospital Care Programs.—Oklahoma and Tennessee enacted laws authorizing the organization of nonprofit corporations with powers to provide for furnishing hospital and medical services or indemnity benefits. The 1945 Tennessee law provided for the formation of medical service plan corporations only. Pennsylvania amended the existing law relating to medical service plan corporations (1) by providing that medical service plans shall include the services of osteopaths and (2) by authorizing the organization of prepaid dental service corporations. A new South Dakota law permits cooperative associations to furnish medical services to members.

Testamentary Disposition of Body: Anatomic Acts.—Laws enacted in Alabama, Arkansas and Minnesota permit persons to dispose of all or parts of their bodies by will for the purpose of advancement of medical science or replacement or rehabilitation of diseased or worn out parts of other humans. An anatomy board was created in Maryland to have charge of certain dead bodies for the promotion and application of the medical sciences. An Oregon law authorizes the University of Oregon Medical School to use unclaimed bodies for a similar purpose.

Animal Experimentation.—Minnesota by a new law authorizes the state livestock sanitary board to license institutions desiring to obtain impounded animals for purposes of scientific investigation. A Wisconsin law authorizes dog pounds to dispose of unredeemed live dogs to the University of Wisconsin and Marquette University for scientific or educational purposes.

Contraceptives.—A South Dakota law prohibits the sale of contraceptives except by a registered pharmacist or a licensed physician and then only to persons over eighteen years of age.

Chemical Tests for Intoxication.—North Dakota and South Carolina amended their traffic laws to permit the use in evidence of chemical tests relating to the amount of alcohol in a person's blood or other bodily substance.

Barbiturates and Other Drugs.—Laws specifically prohibiting the sale of the barbiturates except upon an original prescription from a person licensed to prescribe and administer barbiturates were enacted in North Dakota, Ohio, Oklahoma and Texas. Iowa adopted a new "drug and cosmetic" act and the food, drug and cosmetic acts of Florida and North Carolina were amended. These laws in substantial effect place certain drugs on a prescription basis. In Florida these drugs are: "aminopyrine, barbituric acid, pituitary and thyroid." In Iowa these drugs are "aminopyrine, barbituric acid, cinchophen, dinitrophenol, sulfanilamide, pituitary and thyroid."

Joint Health Departments.—To enable smaller and less densely populated counties and communities to enjoy adequate public health facilities, six states enacted legislation authorizing the organization of various types of joint health departments. Arkansas authorizes the formation of county and district health departments. Massachusetts authorizes communities to cooperate in the formation of union health departments. Minnesota provides for the formation of county or multiple county health departments. New Hampshire authorizes the formation of district health departments and Washington of city-county health units. The Texas law authorizes cities, towns, school boards and school districts and other governmental entities to cooperate in the establishment of a coordinated health program including provisions for health and clinic centers, health services and facilities therefor.

A WORD OF APPRECIATION

This report may not be concluded without a very sincere expression of appreciation for the fine cooperation that the Bureau has received from constituent and component units of the Association and from many of its individual members. This cooperation has been most helpful. The Bureau expresses a hope that its assistance will be invoked to an even greater extent during the coming year.

Report of Bureau of Health Education

This annual report of the Bureau of Health Education covers the period from Sept. 1, 1948 through Aug. 31, 1949, and is in most respects similar to previous reports, since the work of the Bureau has been largely a continuation of previous assignments.

The most important unusual development was the absence of the Director, by direction of the Board of Trustees, to serve as a Visiting Expert to the Secretary of the Army as a Consultant on Public Health Practices in Germany under Public Health Branch, Civil Administration, Office of Military Government (United States). This trip has been covered in a mimeographed report of more than a hundred pages, including numerous exhibits, which was submitted to the Office of Military Government on the Director's return, copies of which were sent to each member of the Board of Trustees.

The Director left Chicago on March 17, 1949, and, after reporting to Washington for briefing and some delay in sailing from New York, arived at Bremerhaven on April 4. Headquarters were finally established at Bad Nauheim.

With Bad Nauheim as a center, each of the five principal administrative divisions under American control in Germany were visited in turn, namely, Wurttemberg-Baden, Bavaria, Berlin, Hesse and Bremen. Side trips into the British zone were made to Cologne, en route to Bremen, and Kiel and Hamburg from Bremen. Thus every important section of Germany was visited. Studies were made in 25 important cities and a number of lesser localities, such as villages and counties. The study covered practices in public health departments, voluntary health agencies, teacher training institutions and public schools, to the extent that the latter touched the field of health education. Superficial studies were also made of insurance systems and of medical education so far as these touched on public health practices.

In general, the German group was found to be suffering from shortages of money, personnel, space and transportation and from the cultural lag due to seventeen years of successive retardation under Nazi domination, war, military defeat and postwar poverty. Devotion to authoritarian methods and a total lack of appreciation of democratic procedures render the situation in Germany extremely complicated and not very promising from the standpoint of anticipated progress. The German officials who have been approved by Military Government are looked on with suspicion by many of their colleagues and some sections of the population. The United States Government, after initiating many projects, is now curtailing its activities, and there seems great likelihood that personnel will be cut until the maintenance of the necessary advisory staffs to assure progress will become impossible. In that event, it is probable that Germany will revert to prewar methods and American occupation efforts will largely have been wasted.

It is impossible at this time to assess the values which may have accrued through contacts between the Director, as representative of American medicine, and the German physicians and educators encountered. It is likewise impossible at this point to evaluate the possible influence of his project on German public health practices. The recommendations in the report of the Director were incorporated by the Chief of the Public Health Section, Civil Administration Division, in his recommendations for the fiscal year 1950 to 1951.

The Director returned home by way of England to observe health education procedures in that country.

During the absence of the Director the work of the Bureau was effectively carried forth under the direction of the professional staff and with the excellent cooperation of the clerical employees.

Immediately on the Director's return from Germany, he was notified that the Board of Trustees had designated him Editor of *Hygeia.*

New and enlarged quarters have been assigned to the Bureau. Included in these quarters is a sound-proof recording room, excellently equipped for recording programs off the air and in the studio and for relaying programs to the office of the Secretary and General Manager and the Director of the Bureau, as well as for transferring programs from tape to tape, records to tape, or air to tape. Television reception is also provided.

QUESTIONS AND ANSWERS

Individual letters received and answered in the department of the Bureau which handles medical inquiries from laymen totaled 11,146 from Sept. 1, 1948 through Aug. 31, 1949. Although many communications contained as much as four or five such questions, no attempt has been made to determine the exact number on that basis. It may well be in the neighborhood of 30,000 questions. This total represents a large increase over that for the preceding period and represents a definite upswing in interest. Although there might be a tendency to attribute this increase to current discussion of medical services, breakdown of the questions does not support such a conclusion. Actually, the subject of medical practice was in fourteenth place, which is in decided contrast with the previous year.

At the same time, there was a distinct upswing of interest in the American Medical Association, its organization and activities. In first place among the questions were those on cancer, with allergy next in line. Among other leading subjects were mental hygiene, alcohol and diabetes.

There is a definite parallel between the trends observed and various activities that have been given emphasis in newspapers and popular magazines. The cancer detection campaign, increased emphasis on mental hygiene, the problems of alcohol and diabetes detection undoubtedly served to stimulate a desire for more information on those subjects. It may be noted in passing that there has been a rising interest in the problem of chronic rheumatism and arthritis.

LOAN COLLECTIONS

A tremendous increase in requests for loan collections of *Hygeia* articles was experienced during the past year. A total of 126 applications were serviced, compared with 51 for the previous year. Review of the breakdown discloses that 69 requests came from physicians, compared with 39 in the earlier period. It is believed that this is evidence of the increasing demand on the part of lay groups for medical discussions by physicians. The fact that these collections present authoritative information written in popular language makes it possible for physicians to discuss current medical topics in terms readily understood. It is believed that this is an important contribution to promotion of friendly relationships between physicians and the general public.

Requests for loan collections from the general public also increased. Most of these were from health education workers or from persons developing health education studies in clubs or other organizations. However, there was an appreciable amount of interest at the college level, applicants drawing on the assembled material in loan collections for preparation of special assignments in health education.

Requests for loan collections come from virtually all areas, with 28 states represented. It is recognized that many state medical associations now have excellent facilities for physician members who have been invited to speak before lay audiences. The Bureau of Health Education makes no pretense of being in competition with such a development, but instead believes that it should be encouraged. On occasion, loan collections have been sent to state medical association headquarters for distribution to medical speakers.

RADIO

National Broadcasting Company.—The network program, "Your Health Today," was reduced from 30 minutes to 15 minutes and from 26 weeks to 18 weeks. At the end of the 18 weeks, by special request of NBC, the program was extended throughout the calendar year 1949 and was still in progress at the end of the period covered by this report. In the early months the programs consisted of about 35 per cent remote pickup talks by representatives of medical societies and medical schools detailing medical progress and medical news. Later a modified dramatic form, somewhat similar to the Dr. Riggs' programs previously broadcast, was adopted.

Transcriptions.—During the year the series of electrical transcriptions entitled "Guardians of Your Health" was remade from new scripts. One new series was added to the transcription library, namely, "The Story Behind the Discovery," a dramatized series, with music, on animals and medical research.

Special Broadcasts.—Special broadcasts included those at the Interim Session in St. Louis in December 1948, and at the Annual Session in Atlantic City in June 1949, as well as at the Rural Health Conference in Chicago in January 1949.

Radio and television activities during the 1949 session at Atlantic City were many and varied. Although Atlantic City has no key network radio stations, many network programs were made possible by means of tape-recorded interviews which were made in a studio set up in the convention hall. These tape recordings were edited and sent to such program centers as New York and Chicago for network broadcast. In addition, special telephone lines were installed to carry some broadcasts directly to the networks.

The "Nancy Craig Program," the American Broadcasting Company's outstanding series directed to women, moved to Atlantic City for two days, devoting its full facilities to coverage of the convention and continuing this coverage for a third day from New York. These were 30 minute broadcasts on the full ABC network and were also heard internationally over the "Voice of America."

In addition, Miss Craig recorded two additional broadcasts, one of which was aired on July 20 and the other on August 2. Her enthusiasm for what she saw at the convention has opened her program for many future American Medical Association programs on this series.

In all its efforts, the Association enjoyed excellent cooperation from stations and networks. At the present time it is the policy of all networks not to carry "convention coverage" as such; however, they were most receptive to program ideas tailored for their established series.

TELEVISION

Although no sustained program in television was carried out by the Bureau of Health Education, nevertheless during the year there was a continuation of activities in this new field of health education.

The regular weekly series which had been produced in cooperation with television station WBKB, Chicago, was continued from Sept. 3 through Oct. 8, 1948. Outstanding among programs presented during that period was one in which Harold Russell, the amputee who had the lead part in the motion picture "Best Years of Our Lives," took part; and a program dealing with "blue baby" operations, in which Dr. A. C. Ivy, head of the Colleges of Medicine, Pharmacy and Dentistry, of the University of Illinois, served as interpreter and discussed the basic problems with the aid of special charts prepared by the Bureau of Exhibits.

At the Interim Session in St. Louis, three television programs were presented.

Since the early part of 1949, the Bureau has participated at irregular intervals in a half-hour television program over WGN-TV, Chicago, entitled "Woman's Magazine of the Air." Special attention has been given to selection of programs of interest to that type of audience.

A special television broadcast was done over NBC from New York on Thursday evening of the week following the Annual Session in Atlantic City and as part of convention coverage. This was the first network medical telecast in history and was carried over the coaxial cable as far west as Chicago and St. Louis. The show was titled "Your Good Health and the Mighty Atom."

HEALTH AND FITNESS

The work of the consultants in health and fitness continues to be concentrated primarily in the field of school health services, school health education and healthful school living. More and more medical societies and associations, departments of education and departments of health are displaying increased interest in school health and calling on the consultants for service in connection with the development and expansion of school health services in the various states and in local communities.

During the past year the two consultants in the Division accepted 64 invitations to address groups or take part in conferences, workshops and institutes in 33 states. Twenty-one of the engagements involved participation in annual meetings of health and educational organizations. The division representatives took part as consultants in 40 conferences or meetings on health education. Ten trips were made to consult with school or college authorities on school health problems and policies.

Suggestions came to the Bureau from many sources that the Conference on Physicians and Schools first held in 1947 be repeated at about two year intervals to stimulate further state and local action and to evaluate progress made. Consequently the Board of Trustees gave approval to the scheduling of the Second National Conference on Physicians and Schools at the Hotel Moraine, Highland Park, Ill., Oct. 13 to 15, 1949. Acceptance of invitations to send delegates by a large proportion of state medical societies and associations, state health departments, state education departments and national health agencies assured a good attendance.

Three publications continue to be "best sellers" among the bulletins on school health distributed by the Division. "Physicians and Schools," the report of the 1947 Conference on this subject; "Health Appraisal of School Children" and "Suggested School Health Policies" apparently fill a real need and together make up a fairly complete summary of principles involved in the school health program. As a result of the recommendations set forth in these publications, many state and local medical societies have appointed school health committees or designated already existing committees as liaison groups to advise with school administrators and health department officials in the development of school health policies. A large number of state medical societies are now represented on state school health councils, and many are participating in sponsoring conferences and meetings on school health.

The Division is now engaged in making a survey of school health services on a nationwide basis. Questionnaires addressed to all constituent medical societies were designed to determine the extent of medical society participation in local school health programs. An excellent return of some 1,200 responses from the nearly 1,900 societies queried will make the findings and their eventual reporting of real significance.

The Consultants have given assistance to the Joint Committee on Health Problems in Education in preparation of statements on Health Education—A Text for Teacher Education; The Organization and Function of the Joint Committee; Handicaps Affecting Young People in Making Social Adjustments; The American Medical Association and School and College Health Programs; Choosing Medicine as a Career, and How to Choose a Doctor.

In addition to these efforts the consultants addressed various Parent Teacher Associations, Child Study Groups and similar organizations. They attended nine meetings of national committees of which they are members and have participated in the work of numerous committees dealing with health problems.

One of the consultants, Dr. Fred V. Hein, holds the office of secretary on the Joint Committee on Health Problems in Education, while the other, Dr. Donald A. Dukelow, is secretary of the Health Education Section of the American Public Health Association.

In accordance with the policy of the Bureau the consultants' services are made available on invitation from medical societies and associations, state departments of health, state education departments and other reputable organizations interested in school health and fitness.

For the third successive year the consultants are continuing to prepare a series of "Suggested Discussion Questions" to accompany each issue of *Hygeia*. The consultants are also called on to review a considerable number of films and other audio-visual aids for use in schools as well as to make suggestions on health education curricula and to review articles on various health and fitness subjects scheduled to appear in national periodicals in the field.

During the year a second exhibit on school health, entitled "Physicians and Schools," which portrays the physician's place in the school health service program, was prepared and will be displayed at the Second National Conference on Physicians and Schools and at the annual meeting of the American Public Health Association in New York, October 23 to 28, and then will be available for loan to medical societies and associations for use at appropriate meetings. The first exhibit prepared by the Division, entitled "Health Appraisal of the School Child," is still being used at state medical association meetings and is available for use in places where the display has not previously been shown.

BUREAU PUBLICATIONS

Distribution of Bureau publications through the Order Department during the period from Sept. 1, 1948 through Aug. 31, 1949 was 244,477. In addition, the Bureau sold 68,300 reprints direct to quantity purchasers, making a total of 312,777.

On request of this Bureau, the title of the catalog of technical publications prepared by the Order Department is being changed from "Publications of the American Medical Association" to "Technical Publications of the American Medical Association." The former title gives the impression that the catalog includes all Association publications, whereas a great many other publications are available and listed in a catalog released annually by the Bureau. Both catalogs will from now on carry prominent mention of the availability of the other.

MEETINGS AND CONFERENCES

The Bureau staff attended meetings and addressed audiences in 25 states and participated in 85 conferences and committee meetings during the year.

COOPERATIVE RELATIONSHIPS

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.—The annual meeting of the Joint Committee was held at the Chicago offices of the American Medical Association March 14 to 16, 1949.

The Committee elected George M. Lyon, M.D., Chairman; Mabel E. Rugen, Ph.D., Vice Chairman, and Fred V. Hein, Ph.D., Secretary for the following year.

Principal actions by the Committee were as follows:

(1) Recommended to the National Education Association that at the annual N. E. A. meeting state delegates be appointed to meet with Joint Committee representatives to discuss and submit school health problems for the Committee's consideration.

(2) Appointed a subcommittee to give further study to the problem of coordinated classroom lighting.

(3) Reviewed a preliminary draft of a statement on the "Organizational Structure and Function of the Joint Committee" and approved the report, subject to revision.

(4) Appointed a subcommittee to study the scope of the problem and the proper role of the Joint Committee in the development of a "Statement on Health Services in Camping."

(5) Agreed to maintain representation in the National Conference for Cooperation in Health Education for another year.

(6) Reviewed, without taking action, the statement on "Relationships of Voluntary Health Agencies to the School Health Program."

(7) Ordered that the Secretary transmit the resolutions on "Allotment of Funds to Schools" and on the "Principle of Cooperative Planning of School Health Programs" to the secretaries of the Chief State School Officers Association and the Association of State and Territorial Health Officers and urge the support of these groups in implementing the resolutions.

(8) Considered the platform on "Adapted Physical Education" submitted by a committee of the American Association for Health, Physical Education and Recreation, with the decision that further study should be given to the statement.

(9) Appointed a subcommittee to prepare a statement dealing with the problems of sleep and rest for school children.

(10) Approved for distribution to schools, with minor revisions, pamphlets on medicine as a career in relation to vocational guidance, choice of a doctor in relation to consumer education and a statement on the relationship of medical societies and associations to school and college health programs.

(11) Reviewed the manuscript "Handicaps Affecting Young People in Making Social Adjustments" after subcommittee revision and approved plans for publication after further review and editing.

(12) Considered the first draft of the "Health Manual for Physical Education Teachers," made revisions through a subcommittee and approved the style to be used in preparing the manuscript for submission to the Committee for final approval before publication.

National Conference on Cooperation in Health Education.—There was one meeting of this group during the year, which was held at American Medical Association headquarters March 17 and 18. Mr. John L. Bracken, chairman, emphasized that the purpose now, as when the Conference was formed in 1937, was to obtain a meeting of minds of representatives of health and education organizations on a national level. There are at present 60 member agencies which contribute to activities of the Conference in one way or another. Invitations have been extended to additional departments of the National Education Association and other organizations to become members of the Conference.

United States Children's Bureau Advisory Committee on Maternal and Child Health Services.—A meeting of this committee was held in Washington, Sept. 15, 1948. The Children's Bureau adopted a new technic in the organization of its Advisory Committee on Maternal and Child Health Services. Designating the committee as a meeting of producers and consumers, it included representatives of many different organizations, such as universities, voluntary health agencies, social service groups, medical and hospital associations, medical schools, schools of nursing, the dental profession, farm groups, public health agencies, specialty societies, private practitioners, civic groups, labor unions, public relations representatives, veterans' groups and women's organizations.

The American Medical Association was represented by Dr. James R. Miller, a member of the Board of Trustees, and by the Director of the Bureau.

The policies of the Children's Bureau for expanded public health services through state cooperation were discussed along broad general lines. As usual, the meeting was employed as a sounding board by special groups, particularly those expressing adverse opinions of the medical profession for propaganda purposes.

National Society for the Prevention of Blindness.—The Board of Trustees has approved the Director's acceptance of membership on the Board of Directors of the National Society for the Prevention of Blindness.

National Committee on Boys & Girls Club Work (4-H Clubs).—The annual meeting was held at the Stevens Hotel, Chicago, Nov. 29, 1948. Dr. Fred V. Hein represented the Director at this meeting.

Committee on Organized Public Support of the President's Highway Safety Conference.—The Director was authorized by the Board of Trustees to accept membership on this Committee, which met in Washington, D. C., on March 18 and again on June 1 and 2, 1949. This latter meeting was the first full scale national meeting since 1946 and emphasized traffic safety in small communities and rural areas.

Section on Health Education.—The Medical Consultant in Health and Fitness was elected Secretary of this Section at the annual meeting in November 1948.

American Public Health Association Committee on Professional Education.—This committee continues its work in the development of standards of education and performance for public health personnel, accrediting of schools of public health and attacks on the grave questions of personnel shortages, security of tenure, political domination and inadequate remuneration, which seem to be the major obstacles toward the recruitment of properly trained personnel in adequate numbers.

Contrary to the American Public Health Association's policy, the Director of the Bureau of Health Education was reappointed for a third term on this committee.

Subcommittee on Evaluation of Committee on Planning in Health Education.—The Associate Director of the Bureau has been appointed to this subcommittee.

Subcommittee on Accident Prevention.—This subcommittee is allocated to the Committee on Administrative Practice and is under the chairmanship of Dr. Donald Armstrong. The Committee furthers accident studies and considers publications of materials in the field of accident prevention.

Following is a list of the committees on which the Director of the Bureau serves as the official representative of the American Medical Association:

Executive Committee, National Society for Medical Research.
National Committee for Traffic Safety.
Advisory Board on Health Services, American National Red Cross.
Prentiss Award Committee, Cleveland Health Museum.
Committee on Public Education, United States Office of Civil Defense.
Consultant in Radiological Defense, United States Office of Civil Defense.
Educational Committee, American Cancer Society.

United States Government Agencies.—The Bureau continues to cooperate, largely by correspondence, with government agencies. Materials or information have been furnished during the past year to practically every division of the Federal Security Agency, to the Department of State, the Atomic Energy Commission, the Farm Security Administration, the Department of the Interior, the Office of Military Government for Germany (United States) and the Army.

MISCELLANEOUS

The Bureau continues to compile information about attacks on and defense of medical research and to distribute it in response to requests.

The Bureau furnishes questions and answers to *Hygeia* for publication and checks all galley and page proofs for medical accuracy.

The Bureau continues its cooperation with the Woman's Auxiliary.

Twelve graduate students in health education spent from one to three days in the Bureau studying health education activities on a national scale. Arrangements for these students were made through the offices of the Division of Health and Sanitation, Institute of Inter-American Affairs, the School of Public Health, University of Michigan, and the School of Public Health of Yale University.

Report of Bureau of Exhibits

The work of the Bureau of Exhibits includes activities of various diverse groups.

The Committee on Scientific Exhibit, composed of Dr. Dwight H. Murray, Napa, California, Chairman; Dr. E. J. McCormick, Toledo, Ohio, and Dr. F. J. L. Blasingame, Wharton, Texas, is a committee of the Board of Trustees. It is charged with the administration of the Scientific Exhibit at the Annual and Clinical Sessions of the American Medical Association.

The Committee on Medical Motion Pictures, of which Dr. W. L. Benedict, Rochester, Minnesota, is chairman and Dr. John G. Bradley, Washington, D. C.; Dr. Morris Fishbein, Chicago; Dr. Chevalier L. Jackson, Philadelphia; Mr. Tom Jones, Chicago, and Dr. Dean F. Smiley, Chicago, are members, concerns itself with medical films for teaching purposes, maintains a rental library of films and makes itself available for consultation and advice on matters of film policy. Mr. Ralph P. Creer is Secretary of the Committee.

The various Councils and Bureaus at Association Headquarters cooperate in the preparation of Association exhibits for medical societies as well as for fairs and expositions.

Preparation and supervision of rooms in which are held the scientific meetings at the Annual and Clinical Sessions of the Association is accomplished with the advice and cooperation of the Council on Scientific Assembly.

THE SCIENTIFIC EXHIBIT
ANNUAL SESSION—ATLANTIC CITY

The Fiftieth Anniversary of the founding of the Scientific Exhibit was observed with one of the most outstanding groups of exhibits in the history of the Association. A committee from the Indiana State Medical Association, of which Dr. Thurman B. Rice was chairman, presented an exhibit on Dr. Frank B. Wynn, founder of the Scientific Exhibit, and showed some of the original pathologic specimens from the meeting in 1899. Another committee, headed by Dr. Frank W. Konzelmann, Atlantic City, with Dr. Peter A. Herbut and Dr. William P. Belk of Philadelphia as members, showed advances in pathology during fifty years, with practical applications of modern methods. A demonstration of the electron microscope was of special interest.

The special exhibit on fractures, which has been a feature of the Scientific Exhibit since 1926, attracted large and attentive audiences in each of the six demonstration booths. The committee, consisting of Dr. Kellogg Speed, Chicago, chairman, Dr. Gordon M. Morrison, Boston, and Dr. Frederick A. Jostes, St. Louis, was assisted by more than fifty demonstrators.

Three exhibit symposiums were extremely popular. The exhibit symposium on diabetes, organized by Dr. Howard F. Root, Boston, consisted of four carefully chosen exhibits. The exhibit symposium on arthritis, under the direction of Dr. W. Paul Holbrook, Tucson, Arizona, included twelve exhibits. The exhibit symposium on physical medicine and rehabilitation was sponsored by the Baruch Committee on Physical Medicine under a committee consisting of Dr. Frank H. Krusen, Rochester, Minnesota, chairman, Dr. Winfred Overholser, Washington, D. C., and Dr. Howard A. Rusk, New York. There were fifteen exhibits in the group, including several on speech rehabilitation. Aisles were crowded to the point of discomfort in all of these exhibits.

Eighteen sections of the Scientific Assembly sponsored groups of exhibits dealing with the various branches of medicine. Each Section elected a representative to the Scientific Exhibit to advise and consult with the Committee on Scientific Exhibit, and the time and energy which these Section representatives contributed was of immense value. There were 365 applications for space, of which only 210 could be accepted, largely because of the limited floor area available.

Two motion picture theaters were maintained in conjunction with the Scientific Exhibit, where continuous showings of films were made throughout the week. Applications were submitted to show 106 films, of which 34 were selected after previews. Each picture was shown once each day. The total attendance for the two theaters was 10,117.

Awards were made to twenty exhibits, including six medals, eight certificates of merit, four honorable mentions, one certificate of appreciation and one special mention. The Committee on Awards consisted of Dr. Roger I. Lee, Boston, Chairman; Dr. L. H. Garland, San Francisco; Dr. J. Duffy Hancock, Louisville; Dr. John E. Rauschkolb, Cleveland, and Dr. Derrick Vail, Chicago.

THE SCIENTIFIC EXHIBIT
INTERIM SESSION—ST. LOUIS

The Scientific Exhibit at the Second Interim Session was highly successful. Seventy-one exhibits were presented, the subjects being correlated with the clinical presentations, including obstetrics, pediatrics, poliomyelitis, arthritis, roentgen diagnosis, laboratory diagnosis, hypertension, hematuria, diabetes, dermatology and cancer. Special mention is made of the excellent group of exhibits on laboratory diagnosis, physical medicine and rehabilitation and cancer.

The exhibits were selected for their special interest to the physician in general practice. Several of the exhibits had been shown at previous meetings but were considered worthy of a second presentation.

Motion pictures were shown for a three-hour period each day in a room adjoining the exhibits, the program consisting of nine films selected for their suitability.

The Interim Session was designed primarily for the physician in general practice. In order to determine the attitude and desires of physicians who attended the St. Louis Session, a questionnaire was sent out at the close of the meeting, with the cooperation of the Council on Scientific Assembly. Five hundred physicians whose names were selected at random from the registration list were asked to give their critical opinions of the scientific program—what they liked, what could have been improved or what could have been omitted. Replies received from 390 physicians have been tabulated as follows:

	General Lectures	Clinical Presentations	Scientific Exhibit	Television	Motion Pictures
Excellent	203	190	269	175	148
Should be increased	77	115	60	115	75
Should be smaller	15	10	28	8	15
Could be omitted	23	4	0	25	27
Total	318	319	357	323	265

ASSOCIATION EXHIBITS

The Bureau of Exhibits interprets the activities of the American Medical Association in visual form, both to the medical profession and to the public. Members of the Bureau's staff, working in cooperation with the different Councils and Bureaus at Association headquarters, show the most recent developments in scientific medicine at medical meetings and at fairs and expositions to hundreds of thousands of persons annually.

There are distinct advantages in the visual form of presentation in that the visitor may spend as much time as he wishes in studying the subject, and the impressions that he receives are more lasting. The attendant at the booth is available to answer questions in detail and to discuss the problem at length. The visitor appreciates this opportunity of getting complete information, as attested by numerous statements, both written and oral.

This work has gone forward during the year on a basis requiring a minimum of expense. Thirty-eight exhibits are now available for loan purposes.

Medical Exhibits.—Twenty-four medical exhibits were scheduled during the year for seventeen meetings of state medical associations and other similar groups, including dental, pharmacal and allied societies. In many instances no attendant from the headquarters accompanied the exhibits—demonstrations being left to local committees.

The purpose of these exhibits is the maintenance of professional relations between the physicians of the country and the American Medical Association.

Health Exhibits.—The demand for health exhibits at fairs, expositions and other public gatherings has increased. There are several advantages in medical participation at such places—audiences are ready-made, involving a relatively small expense in presenting the health message; people are in receptive moods, making it easy to get the message across, and medical organizations appear before the public as scientific and educational institutions.

Opportunities to show health exhibits are numerous, requests coming from many varied sources. The possibilities are enormous, and at a comparatively slight expenditure, millions of people could be reached. Besides fairs and expositions, which are held annually in numerous communities, invitations have been received from special lay groups with the offer of free space. The "Hall of Health" has been suggested often, as well as the "Train of Health," using railroad cars, and the "Parade of Health," using automobiles. These opportunities to disseminate health information and improve public relations should not be disregarded.

Sixty-seven health exhibits were scheduled for thirty-eight fairs, expositions and meetings during the year. Such exhibits were sent out on a loan basis, the recipients being responsible for the expense of transportation, installation and demonstration.

Requests from groups other than medical societies were referred to the local state or county medical societies for approval whenever necessary. Advice and counsel of the Bureau of Health Education was sought to the end that the health education activities of the Association be administered with intelligence and economy.

A new pamphlet describing health exhibits available from the American Medical Association is in the course of preparation.

MUSEUMS

Cooperation has been maintained with the several health museums of the country, all of which are doing excellent work.

The Museum of Science and Industry in Chicago, with an attendance of 1,500,000 persons annually, devotes much space to medical exhibits. The American Medical Association has on display several exhibits originally prepared for the Century of Progress Exposition in 1933 and the California-Pacific Exposition in 1939. Museum policy made it necessary to remove some of these which were prepared nearly twenty years ago, the material either being discarded or lent to other institutions for rehabilitation. The Association exhibits still on display, while still serviceable, are getting old and eventually will need replacing. Dr. Thomas G. Hull, Director of the Bureau of Exhibits, serves as executive director of the health section of the Museum of Science and Industry.

The Cleveland Health Museum has cooperated in an excellent manner. This institution, organized by the Cleveland Academy of Medicine, is devoted entirely to health subjects. During the year it has been the repository of a considerable number of health exhibits no longer serviceable for loan purposes, but which could be refurbished there and placed on display. A question and answer service has been maintained with the cooperation of the Bureau of Health Education.

The Dallas Health Museum, strategically located in one of the buildings at the Fairgrounds in Dallas, is operated with the cooperation of various medical groups. Several exhibits from the American Medical Association are on display and close cooperation has been maintained.

COMMITTEE ON MEDICAL MOTION PICTURES

The Committee on Medical Motion Pictures has assumed a position of leadership in the field of medical motion pictures. It is rendering a valuable service to the medical profession of the United States, and its advice is being constantly sought by numerous agencies in other countries.

Film Library.—Nineteen hundred and forty-two films were lent to medical societies, medical schools, hospitals and other medical organizations from September 1, 1948 to September 1, 1949. This represents an increase of 354 shipments over the previous year, much of it being due to the enlarged employment of films by medical societies and medical schools.

Nine new titles were added to the Film Library, making a total of 220 prints of 61 titles. Eight films were withdrawn because they had become obsolete. Beginning January 1, 1949, a small service charge (approximately $1.00 per 400 foot reel) was made, which in no way decreased the demand for films. Income from this source amounts to nearly $300.00 a month.

Film Reviews.—The reviews of medical films published regularly in The Journal is one of the most important services rendered by the Committee. These reviews are widely read both in this country and abroad. The reviews have been reprinted in booklet form, the 1949 edition containing 144 reviews published from September 1946 to January 1, 1949, together with a classified table of contents and a list of medical motion pictures in the film library. Distribution of the booklet has been wide, copies going to county and state medical societies and medical schools, with more than one thousand individual requests.

Source List of Medical Films.—The source list of medical motion pictures was revised during the year, and now contains seventy-two sources of medical films. It also includes six sources of catalog material, as well as a list of five institutions which publish evaluated lists of medical motion pictures. Lists of motion pictures dealing with specific subjects, such as cardiology and preventive medicine, have been prepared, the number of subjects totaling 125. These lists are in great demand, many hundreds of copies having been distributed, and they are available to the medical profession on request.

Source List of Health Films.—The source list of health films has been revised and brought up to date and now includes forty-three commercial organizations and educational institutions which distribute films dealing with health subjects. A list of twelve references to health film catalogs has been included.

Special Projects.—Through a special grant from the Becton-Dickinson Foundation, a motion picture, entitled "They Also Serve," was produced, with a premier showing at the Annual Session in Atlantic City. This film deals with the physician's responsibility in the event of a major disaster and is of special interest to state and county medical societies. The picture has been well received by the medical profession, copies having been requested by various organizations in this country and abroad. A brochure designed to accompany the film has been prepared.

The 1948 Census of Hospitals and Report of Internships and Residencies contained four questions regarding the use of medical motion pictures and the availability of motion picture equipment. The results of this survey have been compiled, and a preliminary report was published in the Hospital Number of The Journal, May 7, 1949.

All films shown at the meeting of the American Academy of Orthopedic Surgeons were previewed in the projection room at American Medical Association Headquarters by special arrangement with the Committee on Medical Motion Pictures. This was not only a service to the orthopedic surgeons, but it afforded the Committee an opportunity to become familiar with the latest productions in that specialty.

Cooperation is being extended to the International-American Congress on Obstetrics and Gynecology in securing motion pictures from foreign countries for its meeting in 1950. These contacts are of mutual benefit.

Through a special arrangement with one of the medical fraternities at the University of Illinois, selected teaching films were shown at the fraternity house twice monthly during the school year. A questionnaire as to the effectiveness of each film was executed by each student and an informal discussion followed regarding the teaching value of the film.

Many conferences have been held with the Council on Medical Education and Hospitals in connection with the forthcoming survey of medical schools, and several pertinent questions dealing with the use of motion pictures in medical education will be included in the survey which is already under way.

Several sponsors and producers of medical films have contacted the Committee from time to time for advice and counsel regarding the production of medical films.

An increasing number of state medical associations are showing films as an integral part of their annual meetings. The Secretary of the Committee on Medical Motion Pictures has been consulted by many program chairmen relative to the organization of such programs and the availability of motion picture material.

Mobile Medical Film Projects.—The Bureau of Audio-Visual Instruction of the State University of Iowa, Extension Division, in cooperation with the Iowa State Medical Society, is planning a Mobile Medical Film Project, the purpose of which is to provide in-service training to practicing physicians in the State, especially in rural areas, through the use of medical films. The Committee on Medical Motion Pictures has been consulted on this project and is working in close cooperation with the Speakers Bureau of the Iowa State Medical Society and the University of Iowa.

MISCELLANEOUS ACTIVITIES

Members of the staff have continued to serve on numerous committees, to confer with many persons from the United States and foreign countries on matters pertaining to all methods of visual education and to prepare articles for publication, review books and address meetings.

During the year, Mr. George B. Larson joined the staff as Assistant Director of the Bureau. His experience and judgment in matters pertaining to medical organization have been a distinct contribution to the work of the Bureau.

Report of Bureau of Medical Economic Research

During the twelve months ending Sept. 30, 1949, 68,000 copies of printed Bureau bulletins were distributed, many of them through state medical associations. This is in line with the recommendation of the Reference Committee on Reports of Board of Trustees and Secretary to the House of Delegates at the St. Louis Interim Session in 1948. The Bureau mimeographs or planographs certain miscellaneous items, usually consisting of one or two pages; 25,000 copies of these miscellaneous items were sent out during the year. The number of bulletins and miscellaneous items distributed indicates that the Bureau of Medical Economic Research is now operating on a rather extensive scale. Because of questions raised by members of the House of Delegates, officers of state medical associations and university librarians, a list of the titles of bulletins published by the former Bureau of Medical Economics from 1931 to 1946, numbered 1 to 48, has been prepared. Bulletins 49 to 69 have been published since the name was changed to the Bureau of Medical Economic Research by the Board of Trustees in September 1946, when the present director was appointed.

During the past year bulletins 67, 68, and 69 were published. Briefly these three bulletins contain the following information:

Bulletin 67, "Four Recent Articles on Medical Economics." This is a reprint of four articles and five "current comments" which were prepared by the Bureau and which appeared in four issues of THE JOURNAL during the first four months of 1949. The first article is a progress report on the continuing study of medical service areas in the United States. The second article deals with the ages of physicians and the proportion of physicians to population in twenty-three leading nations. The third article shows that medical care prices have not risen nearly as fast as the cost of living. The fourth article deals with the causes of death among physicians and indicates clearly that the medical profession is giving to the general population at least as much and at least as good medical care as it is giving itself; that is, physicians do not live any longer than white males of the same ages.

Bulletin 68, "Misuse of American Medical Association Data": Various members of the House of Delegates have expressed to the Director their embarrassment at hearing or reading statements that "according to the Bureau of Medical Economics in 1939 families receiving less than $3,000 a year could not pay for their medical care." It is this statement on which was based the claim that four fifths of the American people cannot pay for medical care. The statement was so carefully refuted in Bulletin 68 that one of the four advocates of compulsory sickness insurance quoted in the bulletin wrote the Director that he would not again attribute this statement to the American Medical Association.

Bulletin 69, "An Analysis of the Ewing Report": Because the Ewing Report was so poorly organized, the Bureau chose to write three essays rather than present a formal book review covering everything mentioned in the report by Administrator Ewing to the President. These three essays are designed to answer the charges that we now have the knowledge and skills to prevent 325,000 deaths each year, that there will be a doctor shortage of something like 40,000 in 1960 and that the American people cannot afford to pay for their medical care. This bulletin should serve as an answer to past, present and future use of these frequently repeated statements which have been widely used by advocates of compulsory sickness insurance.

At the 1948 annual session of the House of Delegates the Bureau was requested to prepare a study of life insurance examination fees. The Bureau's report was presented to the House by the Board of Trustees at the 1949 annual session and referred to the Reference Committee on Reports of Board of Trustees and Secretary, which recommended, and the House approved, that a copy of the study be sent to the secretary of each constituent association for study. In addition the Secretary and General Manager authorized the sending of a copy to any county medical society on written request. The study analyzed the results of four questionnaires mailed to 240 life insurance companies by the Committee for the Promotion of Life Insurance Medical Education of the Association of Life Insurance Medical Directors. In brief, the $5 fee has remained unchanged for many years. The fee for the attending physician's statement varies between companies and between the different types of services rendered by the physician. Three large life insurance companies during 1949 have increased their entire medical examination fee schedules.

Cooperative activities with other departments at Association Headquarters continue to expand. During the year thirty-nine items were published in THE JOURNAL. These include book reviews, current comments, editorials and articles. The IBM section of the Bureau punched and tabulated the information from hospital questionnaires collected by the Council on Medical Education and Hospitals and prepared the tables which were published in the Hospital Number of THE JOURNAL. The Bureau has under way for the first time the preparation of the tables for the Internship Number of THE JOURNAL. Beginning with the Jan. 22, 1949 issue of THE JOURNAL, the Bureau has assumed the task of writing the annual "Death Editorial" concerning the causes of deaths among physicians during the preceding year. The Bureau has prepared punch cards and tabulations on which the first report of the Subcommittee on Mammary Cancer of the Therapeutic Trials Committee was based. The Bureau has also assisted the United States Department of Commerce by furnishing a random sample of physicians from the punch card file. Cooperation with the Woman's Auxiliary and the National Educational Campaign have been among the most heartening experiences of the Director during the past year. The eagerness of the officers of the Woman's Auxiliary to utilize the findings and publications of the Bureau has been most encouraging.

The Director made twelve speeches to a variety of organizations; Everett L. Welker, Ph.D., Associate in Mathematics, and Charles E. Bradley, Ph.D., Associate in Economics, each gave one address during the year.

The IBM machines and staff now occupy expanded and more convenient quarters on the fourth floor in the new wing of the Association's building. It has not yet been possible to complete the punch card inventory on all physicians in the United States, Canada and the United States possessions.

The Secretary and General Manager has asked the Bureau to undertake the task of billing THE JOURNAL and the various special journals. Sometime during 1950 subscribers and Fellows will receive bills in the form of punch cards similar to the forms used by a number of the leading magazines in billing their subscribers when the subscription expires. This operation will produce punch card files useful for other purposes. Information on Fellows and members of the Association will be punched into the basic three card file which the Bureau itself needs for research purposes.

During the summer the Board of Trustees authorized the Bureau to mail a selected list of Bureau bulletins to the larger high schools throughout the country. This operation will be completed during the fall and reported in the next annual report.

The Bureau staff has devoted considerable time to assisting the Association's Committee on Blood Banks in obtaining a list of the 1,500 blood banks in the nation and preparing a questionnaire which was mailed during the first week of October.

There are three continuing research projects on which reports should be in print some time during the next year. Rapid progress is being made on the study of medical service areas showing the distribution of physicians and patients throughout the nation. The phase of group practice currently being studied is the cause or reason for dissolution of groups existing in 1940 which are not now in existence. The third continuing project, in cooperation with the World Medical Association, is an international comparison of vital statistics.

Report of Bureau of Industrial and Personnel Relations

The Bureau of Industrial and Personnel Relations has attempted in previous reports to state its plans with respect to the broad field of personnel administration and to discuss its activities. It has been emphasized that a program would be tailored to the specific needs of the American Medical Association and would be evolved in the light of experience and the Association's particular administrative problems. The Bureau both in theory and practice should and must perform a staff function, a service function to the several councils, bureaus, departments and committees. Reduced to the barest terminologic essentials, the ultimate objective of personnel management or administration, or whatever term is used to describe the field, is to obtain the most effective, efficient and economical use possible of available manpower, bearing in mind fair and just relations with the employees under conditions of employment that act as an incentive to the employee to help attain that end. All procedures utilized by the Bureau have been adopted with this objective in mind and are attempts to attain that goal.

ACTIVITIES WITH RESPECT TO OFFICE AND MECHANICAL OR SHOP PERSONNEL

The office personnel currently in the employ of the American Medical Association numbers 600, with a 1949 payroll of $1,777,732. The number of employees in the mechanical or shop departments is at present 250, with a 1949 payroll of $1,067,704.

The Bureau of Industrial and Personnel Relations performs the following functions with respect to the Association's office personnel:

1. Administration of salary administration program for office personnel whose salaries are under $5,000 annually based on equitable salary differentials and standard salary administration technics. This involves the application of job evaluation, merit rating and area surveys.

2. Formulation of personnel policy relating to overtime, vacations, sick leave, leave of absence and other matters of organizational control.

3. Analysis and interpretation of personnel statistical data such as turnover, staff expansion, overtime costs, absenteeism, tardiness, exit interviews and department payrolls with a view to making periodic reports to the General Manager and to department heads where indicated.

4. Preparation of organization analysis, indicating levels of authority, defining responsibilities, work flow and promotional opportunity.

5. Procurement, selection, testing and placement of office personnel.

6. Conducting of courses for first line supervisors in applied principles of good personnel management, work methods, human relations and the like.

7. Study and application of federal and state laws and regulations as they affect employee-employer relations.

8. Adjustment of employee grievances.

9. Follow-through on procedures called for or indicated in state unemployment compensation acts to reduce tax liability.

10. Administration of employee services, such as hospitalization and medical care insurance, employee counseling and others currently being developed.

11. Jointly with Council on Industrial Health conducts industrial health program.

The following functions with respect to the mechanical or shop personnel are performed by the Bureau:

1. (*a*) Active participation in industry-wide bargaining with the eight printing craft unions whose members are in Association employ and (*b*) independent handling of contractural labor relations with five other miscellaneous unions.

2. Administration of union contract provisions in the light of changing conditions in the American Medical Association printing plant because of changes in work flow, procedures and demands.

3. Conducts periodic staff meetings with printing production foremen to ascertain production facts, to appraise them of cost trends in their operations and to discuss ways and means of more economical and efficient production.

4. Analysis and comparison of American Medical Association unit printing costs with those of other printing organizations.

5. When indicated cost-wise, negotiates most advantageous contractual arrangements possible for contracting out certain Association publications.

6. Presents management's position in all employee grievances to the union and follows through with the appellate procedure established in union contracts.

7. Interprets federal and state laws, regulations and interpretive rulings as they affect management-union relations.

8. Administers provisions of sickness and disability insurance payments required by the contracts of seven printing craft unions.

9. Follows through on procedures called for or indicated in state unemployment compensation acts to reduce tax liability.

Report of Committee on Rural Health

The Committee on Rural Health has two immediate objectives: (1) the annual national conference for exploration and discussion of particular health problems, and (2) the promotion and formation of community health councils for the purpose of encouraging the citizens to help themselves to better health through organization for health education and subsequent action.

The national conference in February 1949 attracted over 600 registrants from practically every part of the country. Each year increasing numbers have attended this national forum on rural health and have participated in the discussion groups. The program of this Committee and the technic followed at the annual conference are developed through discussion with advisory members representing the major farm organizations. In 1948 the Committee on Extension Organization and Policy of the Association of Land-Grant Colleges was invited to name two of its members as advisors. Mr. Aubrey Gates of the University of Arkansas and Miss Gertrude Humphreys of West Virginia University were the appointees.

The recent employment of health education specialists by the extension departments of land-grant colleges has been an important factor in the Committee's second objective. The health specialists also are interested in forming community health councils as a means of promoting health education. The Committee welcomes this parallel activity, and wants to tie in with it. The medical profession and the extension departments are natural allies in this activity.

The Committee has prepared a new Handbook which will be distributed to the members of the House of Delegates at the Washington Session. The Handbook records what is being done for rural health within the states by the medical profession, the medical colleges, the extension departments of land-grant colleges, the councils and bureaus of the American Medical Association, the American Dental Association and the United States Public Health Service.

This record of what is being done in the Committee's fifth year reveals abundant evidence that remarkable progress is being made in the field of rural health. This progress is all pointed toward encouraging the citizen, through community organization, to solve his own problems, in his own way and according to his needs. This tradition of self reliance is still a dominant incentive among rural people. It gives every assurance that the Committee's Eleven-Point Program of utilizing all existing agencies and channeling their efforts through community organizations, such as health councils, will result in a level of rural well-being comparable to that of urban communities.

Conclusion

It is possible that the Board of Trustees will submit a supplementary report at the opening session of the House of Delegates covering a few items on which complete information is not yet available.

Respectfully submitted,

Louis H. Bauer, Chairman.
James R. Miller, Vice Chairman.
Edwin S. Hamilton, Secretary.
John H. Fitzgibbon.
Walter B. Martin.
Dwight H. Murray.
Edward J. McCormick.
Gunnar Gundersen.
F. J. L. Blasingame.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

The major concerns of the Council on Medical Education and Hospitals during the past year have been with the Survey of Medical Education, the actions taken by the House of Delegates at the December 1948 and June 1949 sessions which were referred to the Council, efforts to provide more adequate financial support for medical education, a comprehensive re-evaluation of internship and residency training programs and the problem of graduates of foreign medical schools desiring to practice in the United States.

SURVEY OF MEDICAL EDUCATION

In 1947 the Board of Trustees authorized the Council to proceed with a comprehensive survey of medical education in the United States. With the approval of the Board of Trustees the Council arranged with the Association of American Medical Colleges to appoint jointly a committee of seven men experienced in medical education to conduct the survey and prepare and publish a report of its findings. The members of this committee are President Alan Valentine of the University of Rochester, Chairman, Drs. Herman G. Weiskotten, Joseph C. Hinsey, Victor Johnson, Arthur C. Bachmeyer, Dean F. Smiley and Donald G. Anderson, Secretary.

This committee was active throughout 1948 in planning the broad program for the survey. On January 1, 1949, Dr. John E. Deitrick, Associate Professor of Medicine, Cornell University, Medical College, was granted a leave of absence to assume the post of Director of the Survey. Later in the year, Dr. Robert Berson, Assistant Dean at the University of Illinois College of Medicine, was appointed Associate Director. The detailed plans for the conduct of the survey were completed during the first eight months of 1949. In September the visits to the medical schools were initiated. During the next two academic years, teams composed of two to three men will visit each medical school in the United States, spending approximately five to ten days at each school. At the conclusion of the field work a comprehensive report will be prepared and published.

The objectives of the study have been announced as follows:

To evaluate the present programs and determine the future responsibilities of medical education in its broadest aspects for the purpose of:

1. Improving medical education to better meet the over-all needs of the American people for:
   - *a.* The prevention of disease.
   - *b.* The restoration, so far as possible, to health of all those who suffer illness or injury.
   - *c.* The maintenance of the best standards of physical and mental health of all the people.
2. Assessing the degree to which medical schools are meeting the needs of the country for physicians.
3. Promoting the advancement of knowledge in the fields of medical science.
4. Better informing the public concerning the nature, content and purposes of medical education.

The study should encompass:

1. An inventory of the existing situation.
2. Determination of the need for changes and improvements.
3. Conclusions and recommendations based on the foregoing.
4. Proposals for ways and means of carrying out the recommendations.

Under the detailed plan worked out during the past year, the survey will concentrate on fourteen major aspects of the medical school's activities:

1. The objectives of the medical school (for each of the various fields in which it is active).
2. Organization and administration.
3. Physical facilities.
4. Finances.
5. Faculty.
6. Student body.
7. Curriculum and teaching methods.
8. Research.
9. Graduate training.
10. Postgraduate training.
11. Hospital relationships.
12. Community relationships.
13. Alumni activities.
14. Plans for future development.

On the basis of the program that has been developed, it may be predicted that the survey will make a major contribution to the further development of medical education in the United States in the years ahead.

REPORT ON MATTERS REFERRED TO THE COUNCIL BY THE HOUSE OF DELEGATES

At the December 1948 and June 1949 meetings of the House of Delegates several resolutions were referred to the Council. A summary of the Council's action on these resolutions follows:

Report of the Reference Committee on Medical Education, December 1948: This report stated in part, "In support of the activities of the House of Delegates of the American Medical Association in its attempt to redignify the general practitioner, your Reference Committee recommends that a re-evaluation of the basic teaching programs in the undergraduate medical schools and the overemphasis of specialty board certification be made by the Council on Medical Education and Hospitals."

Since a study of these problems constitutes an important part of the Survey of Medical Education, the Council believes that no separate action on this recommendation is necessary at this time.

In June 1949, the House of Delegates passed a resolution requesting the Council on Medical Education and Hospitals, "To investigate the feasibility of extending its inspection to all hospitals within the United States, granting approval to those which meet proper standards."

The Council now periodically inspects all hospitals approved for internship and residency training. There are approximately 1,500 hospitals in this category. In addition, the Council inspects each year a limited number of hospitals for registration. To inspect regularly all registered hospitals or all hospitals seeking registration would add some 5,000 institutions to the number now covered by the Council's inspection service.

At the June 1949 session the House of Delegates passed a resolution that:

"1. Graduate and postgraduate education for general practitioners should be made more widely available.

"2. Two year rotating internships especially designed for those who wish to train for general practice be set up as rapidly as may be possible."

The Council is in entire agreement with the intent and spirit of this resolution and is prepared to give full encouragement and support to institutions conducting or desiring to conduct such programs. Thus, a year ago the Council established, as a new category of residency training, standards for approved residencies in general practice. The response from hospitals interested in establishing such residencies has been gratifying.

FINANCIAL SUPPORT OF MEDICAL SCHOOLS

During recent years the Council has reported frequently to the House of Delegates that a major problem in medical education today is the need for more adequate financial support of the medical schools. In the last year's report, reference was made to the Council's participation with the Association of American Medical Colleges in an effort to enlist the support of leaders in many fields for the establishment of a national organization to secure voluntary funds for the support of medical education. Many individuals and groups have shown interest in the possibility of establishing such an organization. The feasibility of creating such an organization is being actively investigated, and in all probability the formation of such an organization will be announced within the next nine months.

Several bills providing for federal funds for the support of medical education have been introduced into the Eighty-First Congress. In June representatives of the Council testified before the committees of the House and Senate that were considering these bills. Later an opportunity was provided for representatives of the Council to join with other representatives of the health professions in a series of conferences with the professional staff of the Senate Subcommittee on Health. The purpose of these conferences was to advise the subcommittee as to how the proposed legislation could be improved to better meet the needs of the medical schools and the public. As a result of these conferences, Senate Bill 1453 was rewritten as a committee bill and reported favorably to the Senate with the unanimous approval of the Senate Committee on Labor and Public Welfare. The bill was passed by voice vote by the Senate on September 23, 1949. A companion bill H. R. 5940 had not yet been acted on by the House of Representatives Committee on Interstate and Foreign Commerce at the time this report was prepared.

While the Council is not entirely satisfied with the bill, it does incorporate several modifications suggested by the Council's representatives and it is a distinct improvement over any other bill for federal aid to medical education that has been introduced. The chief objection to the bill in its present form is that it provides that osteopathic schools will receive the same aid as medical schools.

The Council is aware that federal aid to medical education creates definite hazards to the continued freedom and independence of the medical schools. With few exceptions, however, the medical schools and their parent universities have expressed the opinion that, unless additional aid is provided, medical education in this country cannot achieve its full development. The legislation which has been passed by the Senate contains safeguards that should protect the medical schools from unwarranted interference in their affairs by the federal government. It must be recognized, however, that if federal officials should become determined to exercise control over the medical schools, these safeguards could be broken through or circumvented without great difficulty. Thus, if the pending measure is enacted into law, the continued independence and freedom of the medical schools will depend basically on the capacity of the federal officials administering the program to recognize that the interests of the nation will be served best if a policy of cooperation and not of domination is adopted.

The greatest safeguard against federal domination of medical education will be the avoidance of a situation in which the medical schools become totally dependent on the federal government for necessary funds. It is hoped, therefore, that the voluntary national organization referred to above will become a reality. Such an organization would possess resources to which the schools could turn for aid, should federal funds ever be offered on terms that were unacceptable. If this organization is established, the Council urges that the members of the medical profession give it their strong support both morally and financially.

APPROVAL OF HOSPITALS FOR INTERNSHIP AND RESIDENCY TRAINING

Since the end of the war, the Council in its annual report has regularly called attention to the rapid expansion in residency training that has been taking place. Before and during the war, the total number of residency positions in the hospitals in the United States numbered only a few more than 5,000. By April 1, 1947, this figure had increased to 10,422, by April 1, 1948 to 15,154, and by May 1, 1949 to 17,293. During this period, the number of hospitals approved for residency training increased from 616 to 1,187.

Two years ago the Council recognized that to administer efficiently its work of surveying and approving the greatly increased number of institutions conducting graduate training it would be necessary to enlarge its staff and to establish a special section on graduate training. This section was established in July 1948 under the supervision of Dr. E. H. Leveroos, Associate Secretary of the Council. As a result of the creation of a section that devotes its entire attention to graduate training, the staff of the Council is now able to visit more than three times as many hospitals each year as it did previously.

Even with this expanded organization, it was early apparent that the full time staff alone would be unable to achieve the Council's objective of resurveying, during the period July 1, 1948 to December 30, 1949, all hospitals approved for internship and residency training, as well as making an initial survey of institutions that had been granted temporary approval for residency training in the period immediately after the war. The Council established this objective because it recognized, together with the American Boards, the medical colleges and the various special medical societies interested in graduate training, that a number of approved hospitals were not maintaining high educational standards.

In order to complete the survey within the period established, the Council requested and received from the Board of Trustees authorization to appoint a number of regional representatives who would agree to take time from their practices or other duties to inspect hospitals in adjacent regions. Twelve regional representatives were appointed early in 1949 and have actively participated in the Council's program since that time. Some representatives have already visited all the hospitals assigned to them. The others will complete their visits by the end of the year. The work of these men has been of uniformly high quality. Many of the hospitals that they have visited have written to the Council expressing their appreciation for the advice and counsel provided. In giving generously of their time and effort these men have made a major contribution not only to the work of the Council, but also to the advance of graduate education in the United States. Following are the names of the men who accepted appointments as regional representatives and to whom American medicine and the Council owe a real debt of gratitude: Dr. Sandy Carter, Atlanta, Ga.; Dr. Charles S. Davidson, Boston; Dr. Thomas F. Frist, Nashville, Tenn.; Dr. Edgar Hull, New Orleans; Dr. Edwin Irons, Chicago; Dr. Manson Meads, Winston-Salem, N. C.; Dr. John Minor, Washington, D. C.; Dr. Louis B. Owens, Cincinnati; Dr. Conley H. Sanford, Memphis 3, Tenn.; Dr. A. B. Scoville, Nashville, Tenn.; Dr. Henry M. Thomas Jr., Baltimore, and Dr. Myron Weaver, Minneapolis.

Detailed statistics concerning the number of hospitals visited during the calendar year October 1, 1948 to September 30, 1949 are set forth in the section of this report entitled "Inspection of Hospitals and Technical Schools." These data may be summarized briefly by stating that since July 1, 1948 approximately two thirds of all hospitals approved for internship and residency training in the United States have been visited by a member of the Council's staff or by a regional representative. Prior to the publication of the Internship and Residency Number in the spring of 1950 the Council will have achieved its objective of inspecting all hospitals that were granted temporary approval and of resurveying all hospitals that had been approved prior to July 1, 1948.

The survey of hospitals approved for internships has been carried on concurrently with the survey of hospitals approved for residency training. At the St. Louis session in December 1948, the House of Delegates ratified a major revision of the "Essentials of an Approved Internship" as prepared by the Council. Early in 1949, these revised Essentials and a reprint of an editorial in The Journal summarizing the important changes in the Essentials were forwarded to all hospitals conducting internship training. Subsequently, individual letters were sent to hospitals whose reports indicated that they had failed to meet one or another of the new requirements. Hospitals already approved for internship training were informed that they would be allowed a period of one year in which to adjust their programs to the newly established standards.

It is well known that there is widespread dissatisfaction among hospitals and the medical profession over the failure of many hospitals to secure a full complement of interns because of the discrepancy between the number of internships offered and the number of interns available. It has been estimated that, if the current discrepancy between the number of internships offered and the number of interns available is to be corrected, a reduction of approximately fifteen per cent in the number of internships available will be necessary. The Council is confident that it will have the full support of the profession in removing from its approved list hospitals that fail to meet its requirements.

While the primary objective in insisting that hospitals meet the Council's standards is to improve the quality of internship training, the secondary effect of reducing the discrepancy between the number of interns and the number of internships should be welcomed by the profession and by the hospitals.

In the evaluation of residency training, the Council has enjoyed the collaboration and cooperation of the specialty boards. As a result of this cooperation, applicants for residencies in hospitals approved by the Council are able to plan their programs with the assurance that they will receive appropriate credit in qualifying for examination by one of the specialty boards. A significant cooperative understanding during the present year has been the reappraisal of surgical residencies that was carried out in collaboration with the American Board of Surgery. As a result of this reappraisal, training programs in general surgery are now classified in two categories: 1. Programs providing one or two years of training which will be recognized after July 1, 1950 as offering satisfactory experience in preparation for further training in the surgical specialties; and 2. Programs approved for three or four years of training which will be recognized after July 1, 1950 as providing adequate preparatory training for certification in general surgery. The establishment of two types of residencies in surgery of necessity created some temporary dislocations in the residency programs of hospitals previously approved. The concept of the graded residency, however, has been generally accepted and is one which should result in more thorough training for the resident who devotes three or four years of his professional career to training in the specialty.

CLASSIFICATION OF FOREIGN MEDICAL SCHOOLS

At the June 1949 meeting the Council requested and received authorization from the House of Delegates to establish a list of foreign medical schools that appear to provide educational programs comparable to those found in American medical schools. Since the June meeting, the Council has had under careful study the procedures to be followed in classifying foreign medical schools and has begun to compile information concerning these schools. This work is proceeding more slowly than had been hoped because of the difficulty in securing suitable personnel to assist in this task. It is hoped, however, that the Council will be in a position to establish a preliminary list of classified foreign medical schools by the early part or middle of 1950.

COOPERATIVE PLAN FOR THE APPOINTMENT OF INTERNS

For the past four years the Association of American Medical Colleges with the endorsement of the Council and the various hospital associations has been sponsoring a plan establishing a uniform date for the appointment of interns by hospitals. This plan, formerly knowns as "The Uniform Intern Placement Plan" has been renamed "The Cooperative Plan for the Appointment of Interns."

The plan which is in effect for appointments to internships beginning July 1, 1950 follows:

This plan for 1949 will apply only to undergraduate students in the fourth year of their medical school course.

Application for Internship

1. Applications are to be filed with the hospitals beginning on the third Tuesday in October (Oct. 18, 1949).

2. Application should be made in duplicate; the original to be forwarded to the dean of the applicant's medical school for transmission together with credentials to the hospitals or hospital of the applicant's choice; the second copy to be mailed directly to the hospital or hospitals by the applicant.

3. The application may be accompanied by letters of recommendation from faculty members. Such letters of recommendation shall not be routinely requested by hospitals.

4. The number of applications filed shall not be limited in number.

Tendering of Internship Appointments

1. The tendering of internship appointments by hospitals shall be made by telegram. No telegram shall be sent which will arrive prior to 12:01 a. m. of the third Tuesday in November (Nov. 15, 1949). Telegrams may be filed in advance for delivery at 12:01 a. m.

Applicants may visit hospitals and be interviewed by the intern committee, but the hospital or its representative shall not commit the hospital or the applicant before November 15, 1949.

2. Hospitals may notify alternates of their status at the same time and in the same manner as their first choice candidates.

Acceptance of Appointments

1. Acceptance of appointments should be made promptly. Applicants should be allowed a reasonable period of time to consider appointment offers, but no specified waiting period after 12:01 a. m. is obligatory.

2. On acceptance of an appointment, prompt notification of withdrawal of applications to other hospitals which have offered appointments should be made.

The objective of this plan and its predecessors has been to eliminate the practice of offering hospital appointments to medical students early in their undergraduate course. This objective has the support of the majority of the medical schools and hospitals, although dissatisfaction with certain details of the plan has been expressed. At the time of preparing this report, it appears likely that a joint committee of the Council, the Association of American Medical Colleges, the American Hospital Association, the Catholic Hospital Association and the Protestant Hospital Association will be created in the near future, to restudy the whole problem of intern appointments and if possible to devise a new and improved plan for dealing with this problem that will be satisfactory to all groups and institutions concerned.

CONFERENCE COMMITTEE ON INTERNAL MEDICINE

During the past year the Conference Committee on Internal Medicine composed of representatives of the Council, the American College of Physicians and the American Board of Internal Medicine was reactivated. This committee, which had been created in 1939 to assist the Council in appraising residencies in medicine and the medical specialties, functioned effectively until the early years of the war when several members of the committee entered military service.

The Council is pleased that this committee will once again be active in evaluating medical residencies. This committee is made up of outstanding leaders in the field of internal medicine and should be an effective agent for promoting high standards of graduate training. In the spring of 1949 the American College of Physicians made a grant of $2,500 to the Council to assist it in its work in relation to this committee.

CONFERENCES WITH AMERICAN COLLEGE OF SURGEONS

In February 1948 a joint meeting of the Trustees of the American Medical Association and the Regents of the American College of Surgeons was held to consider the activities of both organizations in the field of hospital inspections and hospital accreditation. The consensus at this meeting was that desirable economies of effort, time and money could be accomplished if the American College of Surgeons and the Council on Medical Education and Hospitals could organize a single inspection service to evaluate residency training programs in surgery and the surgical specialties.

Since this meeting, members of the Council and the Council's staff have participated in a number of formal and informal meetings with representatives of the Regents and staff of the American College of Surgeons and with representatives of various American Boards in an attempt to work out a plan for a single or a coordinated inspection service. These discussions are continuing actively and it is hoped that within the not too distant future the Council, the College and the American Boards concerned can adopt standards for residency training in surgery and many of the surgical specialties that will be mutually acceptable and that a method can be developed whereby the Council and the American College of Surgeons can publish a single uniform list of institutions approved for residency or graduate training in such fields.

Medical education today encompasses such a broad field and such a multitude of activities that it appears evident to the Council that sound and intelligent progress will depend to a large extent on the ability of the various organizations and groups concerned with medical education to coordinate their activities and resources to achieve a common objective. The Council has long enjoyed its collaboration with numerous groups and organizations and it is pleased that the preliminary discussions with the American College of Surgeons indicate the possibility of fruitful collaboration in still another field.

COLLABORATION WITH OTHER AGENCIES

The Council collaborates with numerous agencies and organizations in the field of medical education and hospital affairs. The close relations that the Council enjoys through regularly constituted liaison committees with the Association of American Medical Colleges and the Advisory Board for Medical Specialties have been particularly beneficial. The Council has continued its cooperation with the Army, the Navy, the Public Health Service and the Veterans Administration in the development of their programs for graduate medical training.

Conjoint activities with these and other organizations and agencies have been varied in nature and have involved members of the Council, the Secretary and members of the staff of the Council. These cooperative enterprises have included consultations, participation in conferences, meetings, the work of advisory committees and joint sessions. A partial list of the agencies and organizations not mentioned elsewhere in this report with which the Council has collaborated during the year includes:

American Hospital Association.
Catholic Hospital Association.
American Trudeau Society.
National Foundation for Infantile Paralysis.
National Security Resources Board.
American Society of Clinical Pathologists.
American Academy of Pediatrics.
Association of Canadian Medical Colleges.
Selective Service System.
American Orthopedic Association.
American Academy of Orthopedic Surgeons.
National Society for Medical Research.
Federation of State Medical Boards.
United States Office of Education.
State Department.
World Health Association.
Pan American Sanitary Bureau.
W. K. Kellogg Foundation.
Rockefeller Foundation.
Institute of International Education.
Institute of Inter-American Affairs.
American Nurses Association.
National Board of Medical Examiners.
American Physical Therapy Association.
American Registry of Physical Therapy Technicians.
American Occupational Therapy Association.
American Association of Medical Record Librarians.
College of American Pathologists.
American College of Radiology.
Academy of General Practice.
American Registry of X-ray Technicians.
Board of Registry of Medical Technologists.
State Medical Associations.
County Medical Societies.
State Licensing Boards.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The forty-fifth Annual Congress on Medical Education and Licensure was held under the sponsorship of the Council on Medical Education and Hospitals and the Federation of State Medical Boards in Chicago in February 1949. More than 300 persons registered for the Congress. The program included papers discussing the establishment of new medical schools, the place of pediatrics and psychiatry in the medical curriculum, the World Medical Association in its relation to medical education, the educational programs of the Public Health Service, the economics of the hospitals' system and observations on medical conditions and medical education in Europe.

The forty-sixth Annual Congress on Medical Education and Licensure will be held in Chicago on February 5, 6 and 7, 1950.

HOSPITAL SERVICE IN THE UNITED STATES

In the past year the Council's annual census of hospitals showed a new high in the utilization of hospital service in the United States. The total of 16,422,772 admissions in 1948, an increase of 593,260 in comparison with the previous year, exceeded also the earlier record of 16,257,402 in 1945. While increases occurred in both the governmental and nongovernmental groups the expansion was not uniform throughout the hospital field. The federal hospitals, for example, reported a reduction of about 100,000 admissions; yet the governmental hospitals, as a group, showed a net increase of 86,147 and the nongovernmental hospitals 507,113. The greatest increase in service was in the general hospitals which reported 15,160,062 admissions or 92 per cent of all patients admitted in 1948. The psychiatric hospitals admitted 305,000, an increase of 13,046, while the tuberculosis hospitals had 105,588 admissions compared with 99,080 in 1947.

The volume of hospital service is also reflected in the average daily census of 1,217,154 reported in 1948. Included in this total is an average census of 437,590 in the general hospital group, a figure representing 36 per cent of the daily patient load in all registered hospitals. The psychiatric hospitals, with only 2 per cent of the admissions, reported an average daily census of 664,399 indicating that nearly 55 per cent of the occupied hospital beds are continuously utilized for psychiatric care. In the field of tuberculosis, the daily census of 66,484 represents approximately 5 per cent of the total hospital load.

It should be noted that the number of admissions reported in the present survey do not include hospital births, which last year totaled 2,794,281 compared with the all-time record of 2,837,139 in 1947. Again the general hospitals reported the greatest number, 2,715,645, or 97 per cent of all hospital births.

The number of hospitals registered by the American Medical Association in 1948 was 6,335, including 4,589 classified as general hospital services. The total capacity is 1,423,520 beds with approximately 72 per cent in the governmental hospitals and 28 per cent in the nongovernmental group. The general hospitals have 576,459 beds, the psychiatric hospitals 691,499 and the tuberculosis division 81,993. Last year the over-all hospital occupancy rate was 85.5 per cent, the general hospitals reporting 75.9 per cent and the psychiatric hospitals 96.1. The high percentage of beds occupied in psychiatric hospitals is an indication of the urgent need for additional beds in this field as many of the hospitals are now required to operate well beyond their normal rated capacity.

CHANGE IN STATUS OF MEDICAL SCHOOLS

On November 9, 1948, the Council voted to admit the Chicago Medical School to its list of approved medical schools. By this action all students in regular attendance at the school on that date will, on graduation, be considered by the Council to be graduates of an approved medical school.

On June 4, 1949, the probationary status of the Hahnemann Medical College and Hospital was terminated and the Council voted to restore the school to a status of full approval.

APPROVAL OF SPECIALTY BOARDS

Examining and certifying boards in nineteen specialties have been approved by the Council. Three specialty boards were added to the group in 1949, when the American Board of Preventive Medicine and Public Health, the American Board of Proctology and the Board of Thoracic Surgery were approved. The Board of Thoracic Surgery has been approved as a subsidiary board of the American Board of Surgery.

MEDICAL SCHOOLS VISITED

During the year, October 1, 1948 to September 30, 1949, the following medical schools were visited for consultation, survey or other purposes:

University of Arkansas School of Medicine.
Georgetown University School of Medicine.
Chicago Medical School.
University of Kansas School of Medicine.
University of Nebraska College of Medicine.
Hahnemann Medical College and Hospital of Philadelphia.
University of South Dakota School of Medical Sciences.
University of Ottawa Faculty of Medicine.
Laval University Faculty of Medicine.
Syracuse University College of Medicine.

INSPECTION OF HOSPITALS AND TECHNICAL SCHOOLS

Inspections of hospitals and technical schools made by the Council during the year October 1, 1948 to September 30, 1949 are summarized as follows:

Intern Training	109
Permanent Staff	80
Regional Representatives	29
Residencies and Fellowships	368
Permanent Staff	261
Regional Representatives	107
Intern Training and Residencies	334
Permanent Staff	232
Regional Representatives	102
Registration	14
Technical Schools	12
Total	837
Individual Residencies and Fellowships Investigated	1,996
Permanet Staff	1,505
Regional Representatives	491

SUMMARY OF HOSPITAL AND TECHNICAL SCHOOLS

Figures for approved hospitals and technical schools with changes occurring during the year, October 1, 1948 to September 30, 1949, are as follows:

Registration of Hospitals	
Hospitals registered, Oct. 1, 1948	6,302
New institutions registered to Sept. 30, 1949	244
Closed or transferred to unclassified file	100
Hospitals registered, Sept. 30, 1949	6,446
Internship Approval	
Hospitals approved for intern training, October 1, 1948	834
Approved during year	16
Removed from approved list	54
Hospitals approved for intern training, September 30, 1949	796
Residency Approval	
Hospitals approved for residency training, October 1, 1948	1,311
Approved during year	51
Removed from approved list	10
Hospitals approved for residency training, September 30, 1949	1,352
Medical Technology Schools	
Approved schools, October 1, 1948	336
Approved during year	69
Removed from approved list	1
Approved schools, September 30, 1949	404
Medical Record Librarian Schools	
Approved schools, October 1, 1948	12
Approved during year	4
Removed from approved list	1
Approved schools, September 30, 1949	15
Occupational Therapy Schools	
Approved schools, October 1, 1948	25
Approved during year	0
Removed from approved list	0
Approved schools, September 30, 1949	25
Physical Therapy Schools	
Approved schools, October 1, 1948	25
Approved during year	6
Removed from approved list	0
Approved schools, September 30, 1949	31
X-Ray Schools	
Approved schools, October 1, 1948	212
Approved during year	24
Removed from approved list	2
Approved schools, September 30, 1949	234

COUNCIL PUBLICATIONS

During 1949 the Council was responsible for preparing material for four numbers of The Journal:

Hospital Number	May 7
Internship and Residency Number	May 14
State Board Number	May 21
Educational Number	September 3

Other regular publications of the Council during the year included:

Postgraduate and Continuation Courses for Physicians—published in The Journal semi-annually.
Proceedings of the 1949 Annual Congress on Medical Education and Licensure.
Approved Examining Boards in Medical Specialties. (A summary of the requirements for certification established by the American Boards.)
Choice of a Medical School. (Prepared for the guidance of prospective medical students.)
Approved Colleges of Arts and Sciences.
Federation Bulletin. (A monthly bulletin published for the Federation of State Medical Boards of the United States.)
Schools for Medical Technologists.
Schools for Physical Therapy Technicians.
Schools for Occupational Therapy.
Schools for Medical Record Librarians.
Schools for X-ray Technicians.

The Council also has reprinted for distribution a number of articles dealing with questions relating to the Council's work and responsibilities. In addition, the Council has published numerous statements in The Journal from time to time concerning current problems.

Revision of publications of the Council during the year included:

Essentials of an Approved Internship.
Essentials of Approved Residencies and Fellowships.
Essentials of Approved Examining Boards in Specialties.
Reciprocity and Endorsement Policies of Medical Licensing Boards.
Requirements of Candidates for Medical Licensure on the Basis of Credentials Obtained in Countries Other Than the United States and Canada.

ELECTION OF DR. GUY A. CALDWELL TO THE COUNCIL

Dr. Guy A. Caldwell of New Orleans was elected by the House of Delegates to succeed Dr. Reginald Fitz, who completed twenty-one years of distinguished service as a member of the Council in June 1949.

PROFESSIONAL STAFF CHANGE

Dr. Robert C. Parkin resigned from the Professional Staff of the Council to accept an appointment as Assistant Professor of Clinical Medicine and Coordinator of Graduate Medical Education at the University of Wisconsin Medical School.

TRIBUTE TO DR. RAY LYMAN WILBUR

The Council was greatly saddened by the death on June 26, 1949 of Dr. Ray Lyman Wilbur. Dr. Wilbur became a member of the Council in 1920 and after the retirement of Dr. Arthur Dean Bevan served as Chairman of the Council from 1929 to 1946, when he retired from the Council. Under Dr. Wilbur's distinguished leadership, the Council was greatly strengthened in its efforts to advance the quality of medical education in the United States. After his retirement from the Council, Dr. Wilbur maintained an active interest in its affairs. He frequently attended Council meetings and his advice and assistance were repeatedly sought by the members of the Council and its staff. Thus almost up to the day of his death Dr. Wilbur was active in promoting the establishment of the national organization for the voluntary support of medical schools referred to earlier in this report. With the death of Dr. Wilbur, the Council and medical education have lost a great leader.

APPRECIATION

During the past year as for many years, the Council on Medical Education and Hospitals has enjoyed the full and cordial cooperation of many institutions and organizations. The Council wishes at this time to record its sincere gratitude for the assistance so received. It is a particular pleasure for the Council to express its appreciation of the splendid support and encouragement that it has received from the officers, Trustees and members of the House of Delegates of the American Medical Association.

Respectfully submitted,

H. G. Weiskotten, Chairman.
Russell L. Haden.
William S. Middleton.
Victor Johnson.
W. L. Pressly.
Harvey B. Stone.
Guy A. Caldwell.
Donald G. Anderson, Secretary.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

Since the Interim Session in St. Louis, Nov. 30 to Dec. 3, 1948, the Council on Scientific Assembly has held meetings on Feb. 12, April 7, May 9, July 25 and Sept. 22, 1949, either in Chicago or Washington. The action taken at these meetings is summarized in this report. A report on further action taken at meetings planned for October 20 and November 18 will be presented as a supplementary report.

SCIENTIFIC PROGRAM FOR WASHINGTON CLINICAL SESSION

The Council offers the scientific program for the Washington Clinical Session as a part of its report. The program, based on eighteen clinical topics given in six or three units, each covering a half day, attempts to cover the most timely subjects of rapidly advancing clinical medicine. To arrange such a program is no inconsiderable task. Eighteen coordinators, chosen by the Council, work as advisors to eighteen subchairmen, who in turn arrange for the detailed program with the aid of associates chosen by themselves.

In one topic alone, for example, this involves the coordinated effort of twelve persons on a committee, fourteen speakers in addition to members of the committee who take part in the program, an energetic chairman of the Local Committee with a large number of associates, the headquarters staff in Chicago, the associated Committee on Scientific Exhibit and, in general charge, the Council on Scientific Assembly. When this is multiplied by eighteen, to cover all topics, the program of the Clinical Session becomes a complex affair, made possible only by many willing hands—in this Session, particularly those of the members of The Medical Society of the District of Columbia and the general chairman, Dr. Oscar B. Hunter. The Council would like to express its appreciation at this time to all the loyal Fellows of the American Medical Association who make a Session of this type possible.

The problems associated with the development of the Interim Sessions, now designated as Clinical Sessions, have occupied a large portion of the Council's time in the last year. Based on the experience gained from the Scientific Assembly of the first Interim Session, held at Cleveland on Jan. 5 and 6, 1948, and the second, held at St. Louis, Nov. 30 to Dec. 3, 1948, the Council decided to omit the general lectures at the Washington Session and to concentrate its efforts on the building up of the clinical presentations, integrating them as far as possible with the scientific exhibits. Although the arrangements for the meeting in Washington do not conform to all the standards set up by the Council, it is hoped that, in view of the problems continually arising regarding accessibility and size of rooms, lighting, loud speakers, television, motion pictures, over-crowding, tickets for individual presentations and many others, the Session will find approval in the House of Delegates. In general, the Council has conformed to the pattern evolved in part from the opinions of physicians who replied to a questionnaire sent out to a random list following the St. Louis Interim Session. A favorable report was received from the majority with almost unanimous approval of the clinical presentations and the Scientific Exhibit. Some were not in favor of general lectures, television or motion pictures. With these suggestions at hand, the Council has molded the program of the Washington Session to fit, as far as possible, into the type of presentation most favored by the majority of Fellows.

ENLARGEMENT OF THE COUNCIL

The Council has found its work facilitated by the enlargement of its membership from five to seven, by action of the House of Delegates at the Atlantic City Session in 1949.

TELEVISION

Since the advent of television, questions have arisen regarding the proper place of this new development in the Scientific Assembly. At present sponsored by commercial interests, although scientific in content as it combines some features of a scientific exhibit and others of a clinical presentation, television did not fall completely into any one of the divisions of Technical Exhibits, Scientific Exhibits or the Scientific Assembly. It was finally decided that the television program at the Annual and Clinical Sessions should be the responsibility of the Council on Scientific Assembly, considering it as primarily a part of the scientific program. The Council, therefore, appointed one of its members, Dr. Stanley P. Reimann, as the official representative of the Council for the 1949 Annual Session and the 1949 Clinical Session. Problems connected with the presentation of television programs are not as yet entirely solved, but the Council, working on rules and regulations for the handling of scientific television by commercial firms, expects to formulate shortly a plan that will be mutually advantageous to both the commercial interests and the American Medical Association. It has already adopted a rule that "before any commercial house makes any arrangements in a particular city where a session is to be held, it shall communicate with the Council on Scientific Assembly which will appoint a local committee to attend to the affair."

SECTION ON PHYSICAL MEDICINE AND REHABILITATION

The new Section on Physical Medicine and Rehabilitation, having been established by action of the House of Delegates at the 1949 Annual Session, will hold its first meeting at the 1950 Annual Session. The following officers for the new Section have been appointed by the Council: Dr. Frank H. Krusen, Rochester, Minn., Chairman; Dr. George M. Piersol, Philadelphia, Vice Chairman, and Dr. Howard A. Rusk, New York, Secretary.

THE GEORGE R. MINOT LECTURE

The Council approved the request of the Section on Experimental Medicine and Therapeutics to establish the George R. Minot lecture to be given each year during the Section meeting.

REQUEST FOR SECTION ON MILITARY MEDICINE AND SURGERY

The request that a Section on Military Medicine and Surgery be established, which was referred to the Council by the House of Delegates at the Atlantic City Session, is being given consideration, and a hearing has been arranged. No definite action has yet been taken by the Council.

MISCELLANEOUS BUSINESS

At the suggestion of the Council a change was made in the format of the Official Program for the 1949 Annual Session in Atlantic City, with the aim to increase readability and facilitate handling.

The Council approved of an invitation being extended to Negro physicians to attend the scientific program at the 1949 Clinical Session in Washington and requested that this invitation be specifically extended to the faculty members of Howard University and to the members of the Medical and Chirurgical Society, Inc., of Washington.

Respectfully submitted,

Henry R. Viets, Chairman.
Leonard W. Larson.
Stanley P. Reimann.
Alphonse McMahon.
Charles H. Phifer.
Carl A. Lincke.
Michael E. DeBakey.
Elmer L. Henderson
President-Elect
Morris Fishbein
Editor, The Journal } Ex officio
George F. Lull
Secretary
Ernest B. Howard
Assistant Secretary

REPORT OF THE COUNCIL ON MEDICAL SERVICE

To the Members of the House of Delegates of the American Medical Association:

REORGANIZATION OF COUNCIL

Progress is being made on the reorganization plan approved by the House of Delegates in December 1948. Under this plan, adopted in the interest of efficiency and economy, activities that relate to medical care are coordinated within the Council on Medical Service.

For the purpose of reorganization, medical care activities were divided into seven categories and a correlating committee created for each. The Council is selecting the members of the committees so as to represent the various areas of the country and to obtain persons with experience in the matters to be studied. The membership will not be constant. Each member will serve for two years and new members will be added as conditions warrant. The Chairman of the Council will call the first meeting of each committee and at this meeting each committee will select its own chairman. One or more members of the Council is to serve on each committee. The present set-up of the correlating committees and their membership is as follows:

1. Correlating Committee on Extension of Hospitals and Other Facilities (The Board of Trustees has integrated its Committee on Hospitals and the Practice of Medicine with the Council's Correlating Committee on Extension of Hospitals and Other Facilities. For the most part the members of the former Committee make up the membership of the latter Committee.)

Elmer Hess, Erie, Pa.
Walter E. Vest, Huntington, W. Va.
John W. Cline, San Francisco.
Walter G. Phippen, Salem, Mass.
(one or more to be added.)

2. Correlating Committee on Medical Care of Industrial Workers (This Committee was selected after conference with the Council on Industrial Health and will work closely with that Council.)

Thomas A. McGoldrick, Brooklyn.
Warren F. Draper, Washington, D. C.
Harold A. Vonachen, Peoria, Ill.
William A. Sawyer, Rochester, N. Y.
Frederick Slobe, Chicago.
Leo Price, New York.

3. Correlating Committee on Indigent Care

H. B. Mulholland, Charlottesville, Va.
Joseph H. Howard, Bridgeport, Conn.
Dean W. Roberts, Baltimore.
Roscoe C. Webb, Minneapolis.
E. A. Ockuly, Toledo, Ohio.
Everett P. Coleman, Canton, Ill.
Everett C. Fox, Dallas, Texas.
A. J. Bowles, Seattle.

4. Correlating Committee on Medical Care of Veterans (The Board of Trustees has integrated its Committee on Veterans' Affairs with the Council's Correlating Committee on Medical Care of Veterans.)

James R. McVay, Kansas City.
Charles B. Puestow, Chicago.
Alphonse McMahon, St. Louis.
Jack Supermaw, Madison, Wis.
Louis M. Orr, Orlando, Fla.
(one or more to be added.)

5. Correlating Committee on Prepayment Hospital and Medical Service (Selection of this Committee is in process and will be announced in the Council's Supplementary Report.)

6. Correlating Committee on Relations with Lay-Sponsored Voluntary Health Plans

(Selection of this Committee is in process and will be announced in the Council's Supplemental Report.)

7. Correlating Committee on Maternal and Child Care

(Selection of this Committee will be made after conferences with the Bureau of Health Education and other interested groups.)

CONFERENCE ON MEDICAL SERVICE

At the Annual Session of the House of Delegates in June 1949, the House of Delegates adopted the report of the Reference Committee on Insurance Plans and Medical Service approving the following resolution:

"Resolved, That the American Medical Association initiate, through its Council on Medical Service, a conference of representatives of various groups, medical and lay, for the purpose of considering formation of a joint planning committee for the study and preparation of more comprehensive plans of medical care for the nation."

The Conference, as suggested in the Resolution approved by the House of Delegates, will be sponsored by the Council on Medical Service through its Correlating Committees.

COOPERATION WITH THE NATIONAL EDUCATION CAMPAIGN

Since its organization in 1943, the Council has maintained a supply of literature on health insurance—voluntary and compulsory. In 1946, the Council cooperated with the National University Extension Association in supplying material to some 7,500 schools, where debates were scheduled on the subject of voluntary vs. compulsory health insurance. This experience resulted in more and more requests for material, and the Council geared its supply to about 20,000 pieces of material a year.

The first announcements of the National Education Campaign altered the picture entirely and brought forth a deluge of requests. Realizing that Whitaker and Baxter could not achieve pamphlet production for several months, the Council accepted this situation and prepared several types of kits for physicians, debate students, interested laymen, lay speakers, libraries, medical society committees and others.

During the first nine months of 1949, almost 1,000 requests a month were received from medical societies and prepayment plans, individual physicians, hospitals and laymen. In response to these requests the Council has supplied over 150,000 individual pieces of literature on the subject of health insurance. Most of the literature is distributed only by request, with much of it in the form of kits that average ten separate items each. To assure maximum use of material, it is generally requested that the kit be placed in a school or a local library when the recipient has finished with it.

Another method developed to assure maximum use of the material is an "Availability List." This list contains the titles of some twenty-eight pamphlets and reprints which can be obtained from the Council office as well as material available through the Bureau of Medical Economic Research and the Whitaker-Baxter office. Instead of sending a supply of literature to be distributed at large medical society meetings, a supply of the "Availability List" is provided so that material may be selected to suit local needs. The results have been rather surprising, from one meeting alone over 500 requests were received. As a special aid to physicians giving talks, the staff prepared a set of information cards. These cards contain pertinent data on all phases of the general health insurance subject and save the physician many hours of reading. The demand for these cards has continually exceeded the supply.

To meet the immediate demand for material, the Council published several pamphlets on the British program. "100 Questions and Answers on the British National Health Act" contains 100 questions developed by the Council staff and answered by Miss Elizabeth W. Wilson. "Medicine Under the British National Health Act" contains Dr. Fishbein's address, given before the Annual Congress on Medical Education and Licensure in Chicago in February 1949. "Britain's National Health Service" is a series of articles by Miss Wilson and The Journal's London correspondent.

Throughout this period the Council has attempted to supply only the small quantity demands, leaving large quantity requests to the Public Relations Department and to the National Education Campaign headquarters.

The Council will continue to supplement the campaign literature by supplying more detailed and varied material for libraries, students preparing debates or papers, writers, medical societies and others interested in more information and viewpoints than are contained in single pamphlets. Particular attention has been and will continue to be paid to public and school libraries.

COMPULSORY CASH SICKNESS BENEFITS LEGISLATION

Bills to provide cash payments during periods of non-occupational disability were introduced in sixteen state legislatures and Hawaii and Alaska during 1949. The states are: Colorado, Connecticut, Delaware, Florida, Illinois, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Mexico, New York, Pennsylvania, Tennessee, Washington and Wisconsin.

This is about the same number of states as received such proposals in 1947, although seven (Colorado, Connecticut, Delaware, Florida, New Mexico, Tennessee and Wisconsin) are new on the list and four (Alabama, Arizona, New Hampshire and New Jersey) do not appear on the list in 1949.

Contrary to the expectations of many people, only two states —Washington and New York—passed bills. Washington is in the midst of a controversy over its bill, and whether or not it will be put in operation depends on the outcome of a referendum to be held during the general election in November 1950. In New York the law calls for the tax to commence Jan. 1, 1950, but no benefits to workers will accrue prior to July 1, 1950.

Of the four compulsory state cash sickness benefits laws now enacted, the New York law seems to be the most acceptable. In Rhode Island the state has a monopoly; in California and New Jersey the state competes with the voluntary plans but requires that the voluntary plans offer more than the state plans in the way of benefits; in New York the state insurance fund competes on equal terms with the voluntary plans. To those, then, who believe in private enterprise as opposed to government monopoly, the New York program should lend heart. It follows the Workmen's Compensation approach and should give private insurance carriers an opportunity to show their wares, and, since in the insurance field New York is often a strong influence on other states, it may result in a tendency toward this type of legislation rather than the monopoly type as in Rhode Island.

Developments in California, Rhode Island and New Jersey seem to lend credence to the oft repeated statement that it is not the original legislation that one needs worry about, but rather the subsequent amendments and changes. For example, more than fifty bills to amend the disability benefits program were introduced this year in the California legislature. Most of the bills were to liberalize the program; i. e., reduce the seven-day waiting period and increase the maximum benefit period to thirty-nine weeks. One liberalization enacted was an arbitrary $8.00 per diem hospital allowance regardless of whether a beneficiary was required to pay for such accommodations. Rhode Island also had its share of bills. Nine were introduced, and one of those which passed increased the maximum benefit from $18 to $25 a week and increased the period of payment from twenty to twenty-six weeks. Even in New Jersey, despite the fact that the program had just begun operation, the legislature received eight bills to liberalize benefits, alter administrative procedures and so on.

These are examples of the machinations of those groups that ease our fears with compromise legislation and then proceed to exert all sorts of political pressure and play on political expediencies to get what they wanted in the first place. This is the danger in compromise. This danger is pointed out very clearly by Miss Elizabeth Wilson in her study of "The Rhode Island Cash Sickness Compensation Program" with the words, "The main trouble with the Rhode Island State System is that it is a state system, that is, political . . . . The political angle comes in through the amending legislation."

While potential dangers lie in possible amending legislation, the principal immediate concern of the medical profession is the doctor's certificate. It is this certificate that, in large part, determines who will or who will not be paid. The fact that "blame" for rising utilization, or absenteeism, is likely to be laid to the medical profession and that "malingering" is often the result of disability benefit program should give the profession cause for serious consideration of such compulsory legislation. Moreover, it might be a relatively simple matter to add a new section calling for medical service after a disability benefit plan has actually become law. Such an amendment could be enacted much more easily than separate compulsory medical service legislation. This in itself may be reason enough to oppose the principle of compulsory cash sickness benefits legislation, at the state level as well as at the national level.

The Council on Medical Service has followed developments in cash sickness benefits legislation and, as in this report, has brought these developments to the attention of the House of Delegates. The study of the Rhode Island program, made by Miss Elizabeth W. Wilson, was released by the Council this spring, and a limited number of copies were reproduced and mailed to a select group, including the state medical associations, for comment. The study received much favorable comment in the press and trade journals and is a valuable addition to the literature in this field. However, the Council is not yet prepared to make a full report on the implications of this type of legislation so far as the medical profession is concerned.

In view of this, the Council on Medical Service plans to call a meeting of its Correlating Committee on Medical Care of the Industrial Worker to consider the advisability of clarifying the American Medical Association stand concerning the principle of compulsory cash sickness benefits. To this meeting will be invited representatives of the state medical societies of Rhode Island, California, New Jersey and New York, as well as representatives of insurance companies operating under nonmonopolistic laws, so that first hand information may be obtained on the operation of such programs in these states.

HEALTH COUNCILS

One of the most encouraging movements in the health field is the increasing interest in health councils. Through this movement, physicians and the lay groups that make up a community are working together to solve health problems at the local level. Here, for the first time in two decades, the emphasis is placed on the community rather than the nation—on community cooperation instead of federal handouts. In this movement the medical profession is recognizing and accepting its responsibility for providing leadership in health planning.

Until a year or two ago health councils were generally thought of as an arm or division of the local community chest organization, with the medical profession an invited advisor. The principal interest in many of these councils was to raise money or promote the program for some special group. The present trend is toward a community organization with the medical profession in the role of sponsor or at least as a major participant.

To provide some direction to the efforts of medical societies in this activity, the Council on Medical Service and the Committee on Rural Health prepared and published a pamphlet, entitled "The Community Health Council." The pamphlet defines a community health council as a community-wide committee which brings into one agency all local elements able and willing to contribute to better health planning. In line with this definition, the pamphlet contains suggestions as to organization, functions and projects. Some 10,000 copies were printed and distributed.

Among the groups particularly interested in the development of health councils are the United States Chamber of Commerce, the American Legion and the National Health Council. The Council on Medical Service is cooperating with the Chamber of Commerce and the Legion in stimulating its local units to participate in health council activities. As for the National Health Council, it is conducting a nationwide survey of the health council movement. The Council on Medical Service is assisting in gathering data for the study and expects to participate in the evaluation of such information as it is collected. When completed, the study should provide a wealth of information on all phases of health council development.

If the health council movement succeeds in refocusing attention on the need for and value of community cooperation, it will be well worth the effort. At no time has there been more need for reawakening of local pride and of concrete demonstrations of the fact that the solutions to our health problems lie in each community and not in Washington. It is in keeping with the objectives of medical societies to assume responsibility in the leadership and direction of health council organization and activity. Only by leading can the medical profession escape being led.

The Council on Medical Service urges every county and district medical society to participate actively in existing health councils in their communities and cooperate with interested lay groups in the establishment of such councils where they do not now exist.

PHYSICIANS PLACEMENT SERVICE

The Bureau of Information of the American Medical Association was created in 1944 to aid in the location of physicians on their return from military service. In November 1947, following the return of most of the physicians who had been in military service, the Bureau was abolished and its functions transferred to the Council on Medical Service. This is the Council's first report on this activity and is in considerable detail so that the members of the House of Delegates may know how the Physicians' Placement Service operates.

For the convenience of physicians desiring a location or change of location, the Council maintains three types of listings of areas where the services of a physician are needed. First, there are areas requesting general practitioners. These are the most numerous, and, therefore, individual listings are maintained on each state. Requests are received from state and county medical associations, and from citizens' groups such as community clubs, Lions clubs, Chambers of Commerce, parent-teachers associations and individual laymen. Second, listings are maintained for areas or communities desiring specialists, but since these are not as numerous, the openings in each specialty for the United States as a whole are combined. These requests are usually received from physicians' groups or communities in need of a particular type of service. Third, information is also available on physicians who desire an assistant or associate, large industrial organizations that need full time physicians, county health departments desirous of employing full time health officers, institutional openings and various government positions.

The assistance of the state medical associations is invaluable in keeping up-to-date information on the openings. Approximately every six months the listings on file are sent to the state medical associations with a request that any locations or positions which have been filled be removed from the list and any new openings be added. Follow-up cards are sent at frequent intervals to the areas requesting the services of a physician to ascertain the current status of their need. When a physician inquires about a desirable location, any one or all three types of listings are mailed to him, depending on the nature of the request. A roster of the state medical association secretaries is included in order that the physician may write directly to the state in which he is interested and receive detailed information about specific locations.

The Council also has Summary Sheets for every county in the United States. The information on these sheets was originally obtained from the state medical associations, the Council on Medical Education and Hospital of the American Medical Association, the Bureau of the Census, Sales Management and the American Telephone and Telegraph Company. These sheets give the names of the county and state medical society secretaries and a brief résumé of the population, number and type of hospitals, total number of physicians, location and climate, principal cities, retail sales and the medical society sponsored prepayment plans available in that particular county.

During 1948 approximately 600 requests were received from doctors interested in locations, and during the first seven months of 1949 over 250 letters have been reecived from physicians, most of whom are just starting in the practice of medicine or returning from military service. During this same period some 200 requests were received from individuals or groups desirous of obtaining the services of physicians for their town or area. In addition to the written requests for locations, many physicians visited the office to secure information. It has been of particular interest to the Council to note that in recent months several physicians have commented on the fact that good locations are not readily available. This might be an indication that the dearth of physicians is not as great as it has been in previous years.

Reviewing the Placement Service activities for the past year we find that most of the physicians seeking a location are entering practice for the first time, either directly from an internship or from specialty training. Contrary to what might be expected, most of the men sought a location for general practice rather than for a specialty. This may be because it is easier for a specialist to find a spot for himself while a general practitioner must rely on others for possible locations. Cities of 25,000 to 50,000 population are most popular. The most popular areas are the West Coast, the Southwest, and the Middle West. Young physicians seeking specialty placements seem to prefer surgery and internal medicine.

As to the areas needing physicians from which requests come, most of the requests are from the Middle West, rarely from the South or those states supposedly lacking in numbers of physicians. Requests come mostly from laymen (community clubs, leaders), and usually a general practitioner is desired.

THE EMERGENCY CALL PROBLEM

A most difficult and yet ever present problem for the county medical society is the handling of emergency medical care calls. The National Education Campaign makes the solution to this problem doubly important, since an unfortunate circumstance in connection with one real emergency case can undo the good done by a dozen speakers or a thousand pamphlets.

During the summer of 1948 the Council surveyed the situation and found only about sixty county societies with plans for handling these calls. To stimulate interest "Emergency Calls" was made a subject for discussion at two of the "Grass Roots Conferences." Then, as a follow up to assist the medical societies in developing plans, the Council published a pamphlet entitled "Planning for Emergency Medical Calls" and distributed it to each of some 2,100 county societies. This pamphlet presents sixteen plans now in operation as examples of how emergency calls can be handled. To date over 5,000 additional copies have been requested by county society committees. At present the Council is preparing a second pamphlet, designed specifically to assist the small county medical societies.

That interest in this problem has been aroused in many states is shown by a recent survey carried on by the Council through the state medical associations. Although at the time of the writing of this report, only twenty-nine states had replied, eighteen reported a total of 225 emergency call plans in operation. The states are: Alabama, Arizona, Colorado, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Washington, West Virginia and Wisconsin. Special mention should be made of Indiana, which reported all county societies as having a plan; Michigan, reporting forty-one county society plans; Pennsylvania, with nineteen plans; Wisconsin, with sixteen plans; and Maryland and New Jersey each with eleven county society emergency call service plans. A complete report for publication in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is planned when the survey is completed.

VOLUNTARY HEALTH INSURANCE

In the June report to the House of Delegates, the Council on Medical Service estimated that 55,000,000 Americans were insured for hospitalization benefits and that 30,000,000 Americans were covered for surgical expense benefits. The final survey figures for the year ended Dec. 31, 1948 proved those estimates to be most conservative.

Dec. 31, 1948 Survey Report.—Hospital and Surgical.—The total figures for the end of 1948 according to a report recently published by the Survey Committee of the Health Insurance Council indicate enrolment estimates of 61,000,000 persons and 34,000,000 persons protected by hospitalization and surgical insurance respectively. In arriving at these figures the Survey Committee included all types of recognized voluntary health insurance programs.

June 30, 1949 Estimate.—By adjusting the midyear 1949 accident and health insurance premium increase and adding the reported enrolment figures from Blue Cross type and Associated Medical Care Plans, it seems reasonable to assume that on June 30, 1949 approximately 65,000,000 Americans were protected by hospitalization insurance and approximately 38,000,000 Americans were insured for surgical benefits.

Growth During 1948.—The remarkable enrolment increase during 1948 indicated a net growth of nearly 8,500,000 in hospitalization insurance and a net increase of over 7,750,000 under surgical benefit insurance. Insurance companies, hospital insurance companies, fraternal societies, Blue Cross plans and medical society, including Blue Shield, prepayment plans account for practically all the growth.

The local Blue Cross plans and the medical society plans were responsible for approximately 3,250,000 of the total increase in those insured for hospitalization benefits while general insurance companies, special hospital insurance companies and fraternal societies were responsible for the balance of the increase. The medical society prepayment plans and plans coordinated with Blue Cross may be credited for approximately 3,500,000 of the total growth of surgical insurance benefit enrolment increase while other voluntary agencies have developed the balance.

It is encouraging to note that two medical society sponsored plans, Michigan Medical Service and United Medical Service of New York, each have enrolled more than a million persons. Other plans are beyond or near the half-million mark. A complete report on enrolment as well as plan benefits will be included in the revision of the Council's brochure, "Voluntary Prepayment Medical Care Plans."

Correlation of Sales and Underwriting.—At the end of 1948, the local Blue Cross plans protected in the aggregate over 31,000,000 Americans. This represents more than 51 per cent of the total insured against the costs of hospitalization. The insurance companies reported approximately 26,000,000, 42.6 per cent of the total, while other organizations accounted for the balance.

The insurance companies and fraternal societies accounted for the largest numbers insured for surgical expense benefits. These agencies insured more than 19,500,000, or over 57 per cent of the total. Prepayment plans coordinated with Blue Cross plans, medical society-sponsored, including Blue Shield type, reported aggregate coverage in excess of 10,500,000 subscribers. This represented a little more than 31 per cent of the total insured for surgical expense benefits. Other organizations, including industrial, mining, lay-sponsored, private group clinics and university health plans, protected nearly 4,000,000, or approximately 11 per cent of the total.

In total numbers 55.8 per cent as many persons are insured for surgical expense benefits as are protected by hospitalization insurance. Local Blue Cross plans and medical society prepayment plans sell surgical expense coverage to 33.9 per cent as many persons as they sell hospitalization benefits. Insurance companies and fraternal societies sell surgical benefits to 75.5 per cent as many persons as they insure for hospital benefits.

In contrast to the two main groups, other organizations, industrial, mining, lay-sponsored, private group clinics and university health plans, insured more persons for surgical benefits than they did for hospital expense benefits.

It should be remembered that the figures for hospitalization insurance benefits and surgical expense benefits are representative of the number of persons insured under each category and the totals should not be added. It is true that one person may be insured by more than one type of insurance program for the same general insurable hazard, however, those responsible for this comprehensive survey did evolve a formula to avoid counting the same insured person under more than one category.

Medical Expense Benefits.—Prepayment programs designed to assist in defraying the expenses of medical care are more recent than those covering hospitalization and surgical expenses. Medical expense benefits are those which cover medical expenses other than surgery. They range from in-hospital medical (nonsurgical) expenses all the way to the more comprehensive benefits providing either payments or services for home and office visits and other routine health care.

The total number as of Dec. 31, 1948 who were insured against these additional costs has been estimated as approximately 13,000,000. This is nearly 4,000,000 more than the number protected at the end of 1947. It is estimated that the number had increased to between 14,000,000 and 15,000,000 by June 30, 1949.

Several agencies are continuing to experiment in this field. In order to prepay all costs of health on an individual basis it is necessary to charge a premium which includes the cost of all care plus the cost of administration. Obviously this all inclusive type of program, whether operated by governmental or private agencies, would cost the individual user of health care more than it would cost without a prepayment arrangement. It is indicated that a good many of the medical expenses in addition to surgical expenses may be covered more soundly by a group underwriting.

Some agencies require disability as a prerequisite to some of these benefits. Others provide safeguards by means of waiting periods or deductible clauses. This means that the patient pays for the first few home or office calls for any specified condition, or that the patient initially pays a specified dollar amount toward the total cost of care for each specified ailment. These methods are being tested as a means of reducing the administrative details and at the same time keep premiums at an attractive level.

The Council on Medical Service has been active in these comprehensive studies. It is planned that these studies will be continued and the reports revised each year. Each survey develops new health insurance facilities not known the previous year. This is due to the local nature of some of the plans. Many plans have been discovered which were purely local in origin and operation. They were designed to meet specific needs peculiar to the locality and did not attract attention elsewhere until these comprehensive studies were undertaken. It is probable that more persons enjoy the benefits of voluntary health insurance than the aforementioned figures indicate. As these surveys continue, eventually all the voluntary health insurance figures will be included.

Future Development and Problems.—Much of the past growth has come from large groups in industrial and urban areas. Many are employed by large concerns and enrolment has been facilitated by payroll deduction and employer contribution. Another large segment comes from memberships in clubs and associations. Many of these groups are enrolled and the insurance payments are included along with membership dues. These fields have been well provided for, in most instances, by present efforts and facilities.

Those who do not enjoy the availability of voluntary health insurance on the same basis are mainly employees of small concerns, independent merchants, self employed, and those engaged in agricultural and allied pursuits. Those engaged in seasonal occupations and migratory workers also constitute a challenge to any type of health insurance program.

Already many insurance companies and prepayment plans have undertaken both community and individual enrolment campaigns with varying degrees of success. Whether persons are enrolled as a part of a community group or as individuals, certain safeguards are necessary to protect the insurers against adverse selection and abuse. It is hoped that improved technics in enrolling and servicing other than employee group prepayment subscribers will soon approach the efficiency of those of group underwriting.

The varied and individual problems of voluntary health insurance are being studied by the Council's Correlating Committee on Prepayment Hospital and Medical Service and continued developments will be reported to the House of Delegates.

Continuing Promotion and Education.—Numerous requests for information continue to come to the council office concerning voluntary health insurance and prepayment medical care plans. These requests come not only from the profession but also from interested individuals and prepayment plans. These questions are answered in the light of past experience and continuous experiments.

The Council publication "Voluntary Prepayment Medical Care Plans" continues to be an important reference source in this field. Each revision contains more comprehensive data about the individual plans and each year the demand for the brochure exceeds that of the previous year. As a supplement, the Council publishes annually a pamphlet of Charts and Graphs. This supplemental pamphlet contains aggregate statistics concerning many phases of these programs.

Another important activity is the Council's sponsorship of the exhibit on voluntary health insurance. This exhibit has been designed as a continuing service and is carried out with the cooperation of other agencies. This exhibit has been requested by many state and county societies as well as by specialty and allied professional societies.

The Council is mindful of its duty to continue to promote voluntary health insurance in the United States. In June the House of Delegates approved the Council's suggested general plan of promotion. Since that time, the Council has considered various specific programs and has submitted a broad over-all promotional program to the Board of Trustees. Consideration and approval by the Board was deemed desirable to assure harmony of policy.

There are several salient features in the suggested program of promotion and education. Continued emphasis on voluntary health insurance rather than a particular type of voluntary plan is deemed important. Realistic income limits are suggested when prepayment plans provide benefits in the form of service and cash indemnity. Other important recommendations include a wider range of selection of voluntary health plans, continued constructive competition among the various underwriting agencies in this important effort, frequent community and individual enrolment campaigns, increased availability of sound health insurance programs in some areas, equal compensation for participating and nonparticipating physicians, especially when plan benefits are in the form of cash indemnity, and reeducation of the individual relative to his responsibility to finance health care along with the other necessities of life.

Regional conferences have proved most valuable in exchanging workable ideas and in encouraging more intense local activity. In the opinion of the Council continued regional conferences could prove effective in the development of local voluntary health insurance committees. These committees could serve to evaluate all sincere and legitimate efforts in the field of voluntary health insurance whether or not the underwriting agencies had the initial sponsorship of the medical profession. The Council continues its belief that no preferential standing should be given to any one type of voluntary plan so long as minimum standards are maintained which are in the interests of the public.

By these specific activities and continued liaison with other interested groups, the Council serves the public and the profession in this important and changing subject.

MISCELLANEOUS ACTIVITIES

Suggested Health Plans and Programs have come to the attention of the Council from many sources. Each has been reviewed and considered in the light of the past policies as well as the Twelve Point Health Program. Each contains interesting points of view and ideas, some of which may be helpful in developing future policy recommendations. However, the Council prefers to withhold any recommendations until the correlating committees have had an opportunity to meet.

A study of the North Carolina Medical Care Commission's Program for the Hospital Care of Indigents and Medical Indigents was requested by the Board of Trustees. Complete information on the program is in the hands of the Correlating Committee on Indigent Care and a report will be made to the Board.

Publication and distribution of a pamphlet entitled "Veterans Home Town Medical Care Program" has been completed. This was carried out, in part, in cooperation with the staff of Associated Medical Care Plan. The pamphlet describes the chronologic development of governmental agencies up to and including the Veterans Administration. It also shows how the government has assumed its present role in financing medical care of veterans and how the medical societies and intermediaries are used in the present program.

Respectfully submitted,

JAMES R. MCVAY, Chairman.
ELMER HESS, Vice Chairman.
WALTER B. MARTIN.
J. D. MCCARTHY.
THOMAS A. MCGOLDRICK.
H. B. MULHOLLAND.
JESSE D. HAMER.
R. L. SENSENICH.
ERNEST E. IRONS.
GEORGE F. LULL.
MR. THOMAS A. HENDRICKS, Secretary.

SCIENTIFIC PROGRAM

CLINICAL PRESENTATIONS

National Guard Armory

Coordinators and Subchairmen

DR. J. ROSS VEAL, Chairman
DR. H. H. HUSSEY, Co-Chairman

SUBJECTS	COORDINATOR	SUBCHAIRMAN
Diabetes	Howard Root, Boston	John Reed, Washington, D. C.
Problems of Delivery	W. F. Mengert, Dallas, Texas	John L. Parks, Washington, D. C.
Pediatric•	Julius Hess, Chicago	Harold Hobart, Washington, D. C.
Laboratory Diagnosis, Including Exfoliative Cytology	Frank W. Konzelmann, Atlantic City, N. J.	H. H. Leffler, Washington, D. C.
Physical Medicine and Rehabilitation	Frank H. Krusen, Rochester, Minn.	Charles S. Wise, Washington, D. C.
Virus and Rickettsial Diseases	Hobart Reimann, Philadelphia	Norman Topping, Bethesda, Md.
Diseases of the Chest	J. A. Myers, Minneapolis	J. Winthrop Peabody, Washington, D. C.
Fluid Balance in Heart Failure, in Renal Impairment and Dehydration and in Shock	Robert Elman, St. Louis	Donald Stubbs, Washington, D. C.
Neurology and Psychiatry	C. Charles Burlingame, Hartford, Conn.	Zigmond M. Lebensohn, Washington, D. C.
Cardiovascular Disease, Including Hypertension and Peripheral Vascular Disorders	E. Cowles Andrus, Baltimore	Clayton B. Ethridge, Washington, D. C.
Cancer	Brewster Miller, New York	Roger M. Choisser, Washington, D. C.
Poliomyelitis	Hart E. Van Riper, New York	Lewis K. Sweet, Washington, D. C.
Hematuria	Albert E. Goldstein, Baltimore	Lloyd G. Lewis, Washington, D. C.
Arthritis	Richard H. Freyberg, New York	Darrell Crain, Washington, D. C.
Dermatology and Syphilology	Donald M. Pillsbury, Philadelphia	Frank Eichenlaub, Washington, D. C.
Roentgen Diagnosis and Treatment	Bernard P. Widmann, Philadelphia	Aubrey O. Hampton, Washington, D. C.
Liver Disease and Jaundice	Leon Schiff, Cincinnati	O. Benwood Hunter, Washington, D. C.
Chronic Diarrheas	Albert J. Sullivan, New Orleans	M. W. Perry, Washington, D. C.

Tuesday, Dec. 6, 1949

IN ROOM 310: DIABETES

Howard F. Root, Boston, Presiding

1:30 p. m. Half-Century Experience in Diabetes.
Elliott P. Joslin, Boston.
Symposium on the Treatment of Diabetes:
The Approach to the New Diabetic.
Joseph H. Barach, Pittsburgh.
The Management of the Juvenile Diabetic.
Alexander Marble, Boston.
Old Age and Diabetes: Consideration of Its Management.
Edward S. Dillon, Philadelphia.

IN ROOM 210: PROBLEMS OF DELIVERY

George Nordlinger, Washington, D. C., Presiding

1:30 p. m. Induction of Labor.
Louis M. Hellman, Baltimore.

2:00 p. m. Obstetric Analgesia.
William G. Leary, Washington, D. C.

2:30 p. m. Indications for Forceps Delivery.
Samuel A. Cosgrove, Jersey City, N. J.

3:30 p. m. Breech Delivery.
Russell J. Moe, Duluth, Minn.

4:00 p. m. Postpartum Hemorrhage.
Frederick H. Falls, Chicago.

4:30 p. m. Indications for Cesarean Section.
George Nordlinger, Washington, D. C.

IN ROOM 307: PEDIATRICS

Charles A. Millwater, Washington, D. C., Presiding

1:30 p. m. Care of the Normal Newborn Infant.
Nina A. Anderson, Cincinnati.

2:00 p. m. Premature Care.
George Maksim, Washington, D. C.

2:30 p. m. Diagnosis and Management of Cyanosis of the Newborn Infant.
William F. O'Donnell, Washington, D. C.

3:30 p. m. Epidemic Vomiting in Children.
J. Edmund Bradley, Baltimore.

4:00 p. m. Diarrhea of the Newborn.
Horace L. Hodes, New York.

4:30 p. m. The Role of Fungi in Acute and Chronic Pulmonary Infection in Childhood.
Byron J. Olson, Bethesda, Md.

IN ROOM 11: LABORATORY DIAGNOSIS, INCLUDING EXFOLIATIVE CYTOLOGY

H. H. Leffler, Washington, D. C., Presiding

1:30 p. m. Laboratory Control of Dicumarol® Therapy.
E. Clarence Rice, Washington, D. C.

2:15 p. m. Biopsy Methods.
Thomas M. Peary, Washington, D. C.

3:30 p. m. Cytologic Diagnosis of Cancer.
J. E. Ash, Washington, D. C.

4:15 p. m. Sternal Marrow Aspirations.
J. R. Krevans, Washington, D. C.

IN ROOM 10: PHYSICAL MEDICINE AND REHABILITATION

1:30 p. m. Opportunities in Physical Medicine and Rehabilitation for the General Practitioner.
Frank H. Krusen, Rochester, Minn.

2:00 p. m. Physical Medicine in the Treatment of Common Fractures. Miland E. Knapp, Minneapolis.

2:30 p. m. Rehabilitation of the Hemiplegic Patient.
Howard A. Rusk and George Deaver, New York.

3:30 p. m. Prescribing Physical Treatment in General Practice.
Gordon M. Martin, Rochester, Minn.

4:00 p. m. Physical Medicine for the Neurologic Patient in General Practice.
Arthur L. Watkins, Boston.

4:30 p. m. Cerebral Palsy in General Medical Practice.
Winthrop M. Phelps, Baltimore.

IN ROOMS 12 AND 13: VIRUS AND RICKETTSIAL DISEASES

1:30 p. m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. Morris Schaffer, Atlanta, Ga.

1:50 p. m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

2:10 p. m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

2:30 p. m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. Morris Schaffer, Atlanta, Ga.

3:30 p. m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

3:50 p. m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

4:10 p. m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. Morris Schaffer, Atlanta, Ga.

4:30 p. m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

4:50 p. m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

IN ROOM 2: DISEASES OF THE CHEST

J. Winthrop Peabody, Washington, D. C., Presiding

1:30 p. m. Modern Treatment of Cough.
Andrew L. Banyai and Leon H. Hirsh, Milwaukee.

2:00 p. m. Pulmonary Infarction.
Hugh H. Hussey, Washington, D. C.

2:30 p. m. Silent Lesions of the Lung.
Edwin R. Levine, Chicago.

3:30 p. m. Bronchiectasis and Lung Cysts.
Martin J. Sokolff, Philadelphia.

4:00 p. m. Physiologic Therapy in Bronchial Asthma and Pulmonary Emphysema, with Motion Pictures of Bronchial Asthma and Obstructive Dyspnea. Alvan L. Barach, New York.

IN ROOM 1: FLUID BALANCE IN HEART FAILURE, IN RENAL IMPAIRMENT AND DEHYDRATION AND IN SHOCK

Donald H. Stubbs, Washington, D. C., Presiding

1:30 p. m. Upset Physiology in Shock.
Weston Bruner Jr., Washington, D. C.

2:00 p. m. The Clinical Diagnosis of Shock.
Donald H. Stubbs, Washington, D. C.

2:30 p.m. Laboratory Aids in the Diagnosis and Treatment of Shock.
Richard H. Fischer, Washington, D. C.

3:30 p.m. Fluid Replacement in Shock with Special Reference to Arterial Transfusion.
Sam F. Seeley, Washington, D. C.

3:55 p.m. The Biochemical Treatment of Shock.
A. C. Rink, Bethesda, Md.

4:20 p.m. Summary: Questions and Answers.
Robert Elman, St. Louis.

IN ROOM 4: NEUROLOGY AND PSYCHIATRY

C. C. Burlingame, Hartford, Conn., and Z. M. Lebensohn, Washington, D. C., Presiding

1:30 p.m. Highlights of the Neurologic Examination.
Joseph C. Yaskin, Philadelphia.

2:00 p.m. Today's Outlook for the Epileptic Patient.
Douglas T. Davidson Jr., Boston.

2:30 p.m. Parkinsonism: The New Approaches.
René Cailliet, Washington, D. C.

3:30 p.m. Practical Rehabilitation of the Paralyzed Patient.
A. B. Baker, Minneapolis.

4:00 p.m. Home and Office Treatment of Neurosyphilis.
T. C. C. Fong, Washington, D. C.

4:30 p.m. Of What Use is the Electroencephalogram?
Charles Henry, Hartford, Conn.

IN ROOM 312: CARDIOVASCULAR DISEASE, INCLUDING HYPERTENSION AND PERIPHERAL VASCULAR DISORDERS

Clayton B. Ethridge, Washington, D. C., Presiding

1:30 p.m. Heart Disease: Practical Utilization of Differential Diagnostic Procedures.
Albert D. Kistin, Washington, D. C.

2:15 p.m. The Cardiac Arrhythmias: Differential Diagnosis and Therapies.
E. Cowles Andrus, Baltimore.

3:30 p.m. Congestive Heart Failure: Current Concepts Covering Pathogenesis and Therapy.
William Dock, Brooklyn.

4:15 p.m. Acute and Chronic Cor Pulmonale.
Thomas M. Durant, Philadelphia.

IN ROOM 6: CANCER

Roger M. Choisser, Washington, D. C. Presiding

1:30 p.m. Role of the National Government in the Control of Cancer.
Austin V. Deibert, Washington, D. C.

1:45 p.m. The Local Health Department in the Control of Cancer.
Charlotte Donlon, Washington, D. C.

2:00 p.m. Tumor Registries in the Control of Cancer.
Hugh G. Grady, Washington, D. C.

2:15 p.m. The Family Physician in the Control of Cancer.
R. Lee Spire, Washington, D. C.

2:30 p.m. Voluntary Health Agencies in the Control of Cancer. Charles S. Cameron, New York.

3:30 p.m. The Diagnosis of Tumors of the Breast.
Charles F. Geschickter, Washington, D. C.

4:00 p.m. The Surgical and Radiologic Treatment of Cancer of the Breast.
Calvin T. Klopp, Washington, D. C.

4:30 p.m. Newer Aspects of Hormone Therapy of Cancer of the Breast.
Frank E. Adair, New York.

IN ROOM 8: POLIOMYELITIS

Montgomery Blair, Washington, D. C., Presiding

1:30 p.m. Diagnosis and Differential Diagnosis of Poliomyelitis. Thomas Gucker III, Boston, and Philip M. Stimson, New York.

James L. Wilson, Ann Arbor, Mich., Presiding

3:30 p.m. The Treatment of Respiratory Failure in Poliomyelitis. Jessie Wright, Pittsburgh, and Stanley J. Sarnoff, Boston.

IN ROOM 3: DERMATOLOGY AND SYPHILOLOGY

1:30 p.m. Clinical Diagnosis of Syphilis.
Frank Eichenlaub, Washington, D. C.

2.30 p.m. Laboratory Diagnosis of Syphilis.
E. F. Chaffee, Washington, D. C.

3:30 p.m. Laboratory Diagnosis of Syphilis.
E. F. Chaffee, Washington, D. C.

4:00 p.m. Treatment of Syphilis.
Donald M. Pillsbury, Philadelphia.

IN ROOM 14: LIVER DISEASE AND JAUNDICE

Peter D. Comanduras, Washington, D. C., Presiding

1:30 p.m. Diagnostic Uses of Needle Biopsy of Liver.
Leon Schiff, Cincinnati.

2:30 p.m. Correlation of Needle Biopsy with Function Tests in the Differential Diagnosis of Liver Disease. Irving Brick, Washington, D. C.

3:30 p.m. Bile Cytology in the Diagnosis of Cancer of the Pancreas and Biliary Tract.
Henry M. Lemon, Boston.

4:00 p.m. What Constitutes Good Biliary Tract Surgery.
Paul Kiernan, Washington, D. C.

4:30 p.m. Differential Diagnosis of Jaundice.
Peter D. Comanduras, Washington, D. C.

IN ROOM 5: CHRONIC DIARRHEAS

William Earl Clark, Washington, D. C., Presiding

1:30 p.m. Modern Concept of Chronic Diarrhea.
Albert J. Sullivan, New Orleans.

2:00 p.m. The Clinical Aspects of Chronic Bacterial and Protozoal Diarrheas.
John Tilden Howard, Baltimore.

2:30 p.m. The Clinical Aspects of Chronic Noninfectious Diarrheas.
Benjamin V. White, Hartford, Conn.

3:30 p.m. Diarrheas of Organic Origin Other Than Bacterial and Protozoal.
Garnet W. Ault, Washington, D. C.

4:00 p.m. Nutritional and Associated Diarrheas.
Irwin L. Norman, Bethesda, Md.

4:30 p.m. Considerations in Differential Diagnosis of Chronic Diarrheas.
William T. Gibb Jr., Washington, D. C.

Wednesday, Dec. 7, 1949

IN ROOM 310: DIABETES

Maurice Protas, Washington, D. C., Presiding

9:00 a.m. Allergic Manifestations in Diabetes.
Joseph T. Beardwood Jr., Philadelphia.

Hypoglycemia.
Samuel Benjamin, Washington, D. C.

Acidosis and Coma: Diagnosis and Treatment.
Joseph Fazekas, Washington, D. C.

John A. Reed, Washington, D. C., Presiding

1:30 p.m. The Diagnosis of Diabetes: Practical Problems and Considerations.
Howard F. Root, Boston.
What Shall We Feed the Diabetic?
Frank N. Allan, Boston.
The Neuropathies.
Charles W. Styron, Raleigh, N. C.

IN ROOM 210: PROBLEMS OF DELIVERY

J. Bay Jacobs, Washington, D. C., Presiding

9:00 a.m. Uterine Inertia.
Raymond T. Holden, Washington, D. C.
9:30 a.m. Episiotomy and Lacerations.
Frederick H. Falls, Chicago.
10:00 a.m. Forceps Delivery.
Russell J. Moe, Duluth, Minn.
11:00 a.m. Management of Premature Labor.
Gilbert J. Vosburgh, Baltimore.
11:30 a.m. Breech Delivery (Manikin).
William T. Lady, Washington, D. C.
12:00 Noon Management of Occiput Posterior.
J. Bay Jacobs, Washington, D. C.

Robert H. Barter, Washington, D. C., Presiding

1:30 p.m. Indications for Cesarean Section.
Robert A. Cosgrove, Jersey City, N. J.
2:00 p.m. Obstetric Analgesia and Anesthesia.
Clayton T. Beecham, Philadelphia.
2:30 p.m. Infant Resuscitation.
Donald H. Stubbs, Washington, D. C.
3:30 p.m. Management of the Third Stage.
J. Robert Willson, Philadelphia.
4:00 p.m. Rupture of the Uterus.
John L. Parks, Washington, D. C.
4:30 p.m. Soft Tissue Obstruction of the Birth Canal.
Robert H. Barter, Washington, D. C.

IN ROOM 307: PEDIATRICS

William F. Burdick, Washington, D. C., Presiding

9:00 a.m. Surgical Aspects of Gastrointestinal Obstruction in the Newborn and Infant.
Robert J. Coffey, Washington, D. C.
9:30 a.m. Medical Management of the Surgical Child.
Frederic G. Burke, Washington, D. C.
10:00 a.m. Anesthesia for Pediatric Surgery.
Charles E. Fierst, Washington, D. C.
11:00 a.m. Understanding of the Mother.
Leo Kanner, Baltimore.
11:30 a.m. Psychiatric Contributions to Medical Care of the Normal Child.
Reginald S. Lourie, Washington, D. C.
12:00 Noon Practical Consideration of Anorexia and Constipation in Children.
D. Lesesne Smith, Spartanburg, S. C.

John A. Washington, Washington, D. C., Presiding

1:30 p.m. Accidentitis: Its Causes and Prevention.
George M. Wheatley, New York.
2:00 p.m. Foreign Bodies in Children.
Chevalier L. Jackson, Philadelphia.
2:30 p.m. Current Use of Antibiotics.
Perrin H. Long, Baltimore.
3:30 p.m. Special Problems of the Adolescent Child.
Joseph A. Johnston, Detroit.
4:00 p.m. The Physician's Attitude Toward the Adolescent.
Dorothy Donley-Dowd, Washington, D. C.
4:30 p.m. Diagnosis and Treatment of Tuberculosis in Children.
Daniel L. Finucane, Glenn Dale, Md.

IN ROOM 11: LABORATORY DIAGNOSIS, INCLUDING EXFOLIATIVE CYTOLOGY

H. H. Leffler, Washington, D. C., Presiding

9:00 a.m. Spinal Fluid in Disease.
Arthur A. Morris, Washington, D. C.
9:45 a.m. Basal Metabolism Rate.
Lester Neuman, Washington, D. C.
11:00 a.m. Rh Antibodies.
William M. Silliphant, Washington, D. C.
11:45 a.m. Diseases of the Kidney and Kidney Function Tests.
Frank W. Konzelmann, Atlantic City, N. J.

Ruell A. Sloan, Washington, D. C., Presiding

1:30 p.m. Laboratory Control of Dicumarol® Therapy.
E. Clarence Rice, Washington, D. C.
2:15 p.m. Biopsy Methods.
Thomas M. Peery, Washington, D. C.
3:30 p.m. Cytologic Diagnosis of Cancer.
J. E. Ash, Washington, D. C.
4:15 p.m. Sternal Marrow Aspirations.
J. R. Krevans, Washington, D. C.

IN ROOM 10: PHYSICAL MEDICINE AND REHABILITATION

9:00 a.m. Treatment of Low Back Pain.
Frank R. Ober, Boston.
9:30 a.m. Exercise as a Therapeutic Agent in General Practice.
Charles S. Wise, Washington, D. C.
10:00 a.m. Physical Medicine as Related to Internal Medicine. George M. Piersol, Philadelphia.
11:00 a.m. The Place of Physical Devices and Apparatus in General Practice.
A. B. C. Knudson, Washington, D. C.
11:30 a.m. Teaching of Crutch Walking.
George Deaver, New York.
12:00 Noon Physical Medicine in Peripheral Vascular Disease. Isadore Levin, Washington, D. C.
1:30 p.m. Opportunities in Physical Medicine and Rehabilitation for the General Practitioner.
Frank H. Krusen, Rochester, Minn.
2:00 p.m. Physical Medicine in the Treatment of Common Fractures. Miland E. Knapp, Minneapolis.
2:30 p.m. Rehabilitation of the Hemiplegic Patient.
Howard A. Rusk and George Deaver, New York.
3:30 p.m. Prescribing Physical Treatment in General Practice.
Gordon M. Martin, Rochester, Minn.
4:00 p.m. Physical Medicine for the Neurologic Patient in General Practice.
Arthur L. Watkins, Boston.
4:30 p.m. Cerebral Palsy in General Medical Practice.
Winthrop M. Phelps, Baltimore.

IN ROOMS 12 AND 13: VIRUS AND RICKETTSIAL DISEASES

Joseph E. Smadel, Washington, D. C., Presiding

9:00 a.m. Mumps. Karl Habel, Bethesda, Md.
9:30 a.m. Infectious Hepatitis.
Joseph Stokes Jr., Philadelphia.
10:00 a.m. Respiratory Viruses: Influenza.
Thomas Francis Jr., Ann Arbor, Mich.
11:00 a.m. Respiratory Viruses: Atypical Pneumonia.
John Dingle, Cleveland.

11:30 a.m. Neurotropic Viruses.
JOSEPH E. SMADEL, Washington, D. C.
Motion Picture: U. S. ARMY.

1:30 p.m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. MORRIS SCHAFFER, Atlanta, Ga.

1:50 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
RICHARD MASON, Washington, D. C.

2:10 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
DORLAND DAVIS, Bethesda, Md.

2:30 p.m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. MORRIS SCHAFFER, Atlanta, Ga.

3:30 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
RICHARD MASON, Washington, D. C.

3:50 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
DORLAND DAVIS, Bethesda, Md.

4:10 p.m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases. MORRIS SCHAFFER, Atlanta, Ga.

4:30 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
RICHARD MASON, Washington, D. C.

4:50 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
DORLAND DAVIS, Bethesda, Md.

IN ROOM 2: DISEASES OF THE CHEST

A. BARKLIE COULTER, Washington, D. C., Presiding

9:00 a.m. Tuberculosis and the General Practitioner.
J. ARTHUR MYERS, Minneapolis.

9:45 a.m. Chemotherapy in Tuberculosis: Its Integration with Other Procedures.
H. McLEOD RIGGINS, New York.

10:10 a.m. History of BCG and Its Present Day Problems. KONRAD BIRKHAUG, New York.

11:00 a.m. Approach to Early Diagnosis and Surgical Treatment in Chest Disease.
NORMAN WILSON, Brookline, Mass.

11:40 a.m. Comments on Mass X-Ray Surveys and Surveys of General Hospital Admissions for Pulmonary Tuberculosis.
ROBERT J. ANDERSON, Washington, D. C.

12:00 Noon Hematogenous Tuberculosis with Emphasis on the Value of Bone Marrow Study for Diagnosis. SOL KATZ, Washington, D. C.

JOHN WATKINS TRENIS, Washington, D. C., Presiding

1:30 p.m. Lipid Pneumonia. A. O. HAMPTON, THEODORE WINSHIP, EDWARD B. McCABE and EDGAR W. DAVIS, Washington, D. C.

3:00 p.m. A Panel on the Diagnosis and Treatment of the Pneumonias. HARRY F. DOWLING, THOMAS McPHERSON BROWN and MARK H. LEPPER, Washington, D. C.

(This will consist of reports of cases of pneumonia and complications of pneumonia, illustrated with lantern slides. The implications in each case will be discussed by a member of the panel. Particular stress will be given to patients who still die of pneumonia because of unsatisfactory diagnosis and treatment. Treatment with the newer antibiotics will be emphasized.)

IN ROOM 1: FLUID BALANCE IN HEART FAILURE, IN RENAL IMPAIRMENT AND DEHYDRATION AND IN SHOCK

WALTER H. MOURSUND JR., Washington, D. C., Presiding

9:00 a.m. Cardiac Mechanisms in Fluid Balance.
JACK KLEH, Washington, D. C.

9:30 a.m. Hemodynamic Changes in Heart Failure.
RENO R. PORTER, Richmond, Va.

10:00 a.m. Pulmonary Edema.
JAMES J. FEFFER, Washington, D. C.

11:00 a.m. Therapy of Heart Failure to Achieve Fluid Balance: (*a*) Fluid Replacement; (*b*) Drug Therapy Influencing Fluid Balance.
MILTON LANDOWNE, Washington, D. C.

12:00 Noon Summary: Questions and Answers.
DRS. KLEH, PORTER, FEFFER, LANDOWNE and MOURSUND.

WILLIAM L. HOWELL, Washington, D. C., Presiding

1:30 p.m. Renal Mechanisms in the Maintenance of Fluid and Electrolyte Balance.
A. C. CORCORAN, Cleveland.

2:00 p.m. Dehydration: The Role of the Kidney.
ROBERT J. SOBERMAN, Washington, D. C.

2:30 p.m. Fluid Replacement in Dehydration.
ROBERT ELMAN, St. Louis.

3:30 p.m. The Clinical Features of Acute Renal Impairment.
WILLIAM P. HERBST, Washington, D. C.

3:50 p.m. The Lower Nephron in Acute Renal Impairment. BALDWIN LUCKÉ, Philadelphia.

4:10 p.m. What to Do and What Not to Do in Acute Renal Impairment.
MAURICE B. STRAUSS, Framingham, Mass.

4:30 p.m. Questions and Answers by Members of the Panel.

IN ROOM 4: NEUROLOGY AND PSYCHIATRY

HARVEY J. TOMPKINS, Washington, D. C., Presiding

9:00 a.m. What Is Psychotherapy?
NORMAN Q. BRILL, Washington, D. C.

9:30 a.m. The Management of Anxiety.
HERBERT STAVEREN, Rockville, Md.

10:00 a.m. Psychiatric Aspects of the Medical Examination.
LEON YOCHELSON, Washington, D. C.

11:00 a.m. Physical Complaints Masking Depression.
SAMUEL V. THOMPSON, Washington, D. C.

11:30 a.m. Electroshock Therapy.
R. FINLEY GAYLE JR., Richmond, Va.

12:00 Noon Psychosurgery. HARRY C. SOLOMON, Boston.

ADDISON M. DUVAL, Washington, D. C., Presiding

1:30 p.m. The Alcoholic Patient.
ROBERT C. BURNHAM, Washington, D. C.

2:00 p.m. The Medical Patient Who Won't Cooperate.
JEROME D. FRANK, Baltimore.

2:30 p.m. What Is Psychosomatic Medicine?
DANIEL BLAIN, Washington, D. C.

3:30 p.m. The General Practitioner as the Front Line Psychiatrist.
ADDISON M. DUVAL, Washington, D. C.

4:00 p.m. When and How to Refer the Patient Who Needs Psychiatric Treatment.
Z. M. LEBENSOHN, Washington, D. C.

4:30 p.m. What to Do with the Acute Psychiatric Emergency.
HARVEY J. TOMPKINS, Washington, D. C.

IN ROOM 312: CARDIOVASCULAR DISEASE, INCLUDING HYPERTENSION AND PERIPHERAL VASCULAR DISORDERS

JOHN M. EVANS, Washington, D. C., Presiding

9:00 a.m. Rheumatic Fever: Etiology; Diagnosis; Prophylaxis; Therapy.
FRANCIS SCHWENTKER, Baltimore.

9:45 a.m. Rheumatic Valvular Heart Disease: Clinical Aspects and Management.
S. A. LEVINE, Boston.

11:00 a.m. Congenital Heart Disease: Recognition; Selection of Cases for Surgery.
HELEN TAUSSIG, Baltimore.

11:45 a.m. Cardiac Surgery: Résumé of Current Procedures and Investigations.
C. ROLLINS HANLON, Baltimore.

IRVING W. WINIK, Washington, D. C., Presiding

1:30 p.m. Bacterial Endocarditis: Diagnosis and Therapy.
HARRY F. DOWLING, Washington, D .C.

2:15 p.m. Syphilitic Cardiovascular Disease: Recognition and Management. PAUL PADGET, Baltimore.

3:30 p.m. Acute Myocarditis: Clinical Aspects; Diagnosis and Treatment.
BERNARD J. WALSH, Washington, D. C.

4:15 p.m. Pericarditis: Recognition and Management.
RALPH C. PARKER JR., Bethesda, Md.

IN ROOM 6: CANCER

WILLIAM W. AYRES, Washington, D. C., Presiding

9:00 a.m. Tumors of the Oral Cavity.
J. L. BERNIER, Washington, D. C.

9:30 a.m. The Diagnosis and Treatment of Cancer of the Stomach. H. A. GROSS, Washington, D. C.

10:00 a.m. The Surgical Treatment of Cancer of the Intestine. GARNET W. AULT, Washington, D. C.

11:00 a.m. The Significance of Abnormal Vaginal Bleeding.
WILLIAM G. LEARY JR., Washington, D. C.

11:20 a.m. The Surgical Treatment of Cancer of the Uterus. J. K. CROMER, Washington, D. C.

11:40 a.m. The Radiation Treatment of Cancer of the Uterus. FRED S. COE, Washington, D. C.

12:00 noon. Post-Menopausal Bleeding: Clinical and Pathologic Studies.
DONALD WOODRUFF, Baltimore.

IN ROOM 8: POLIOMYELITIS

LEWIS K. SWEET, Washington, D. C., Presiding

9:00 a.m. Diagnosis and Differential Diagnosis of Poliomyelitis. DAVID S. GRICE, Boston, and ROBERT B. LAWSON, Winston-Salem, N. C.

JAMES L. WILSON, Ann Arbor, Mich., Presiding

11:00 a.m. The Treatment of Respiratory Failure in Poliomyelitis. JESSIE WRIGHT, Pittsburgh, and STANLEY J. SARNOFF, Boston.

IN ROOM 14: HEMATURIA

9:00 a.m. Introduction "Hematuria."
ALBERT E. GOLDSTEIN, Baltimore.

9:15 a.m. Hematuria and Traumatism.
J. C. KIMBROUGH, Washington, D. C.

9:30 a.m. Hematuria and Prostatism.
R. N. LECOMTE, Washington, D. C.

9:45 a.m. Cancer of Kidneys, Ureters and Bladder.
W. F. LEADBETTER, Boston.

11:00 a.m. Hematuria and Calculus.
C. E. BAGLEY, Washington, D. C.

11:15 a.m. Hematuria and Infection.
T. C. THOMPSON, Washington, D. C.

11:30 a.m. Medical Aspects of Hematuria.
HAROLD J. JEGHERS, Washington, D. C.

12:15 p.m. Undiagnosed Hematuria.
ALBERT E. GOLDSTEIN, Baltimore.

IN ROOM 8: ARTHRITIS

CHARLES RYLAND, Washington, D. C., Presiding

1:30 p.m. The Early Diagnosis of Rheumatoid Spondylitis.
THOMAS MCPHERSON BROWN, Washington, D. C.

2:00 p.m. Classification and Basic Differential Points of Principal Rheumatic Diseases.
WALTER K. MYERS, Washington, D. C.

2:30 p.m. Medical (Including Physical Medical) Management of Rheumatoid Spondylitis Patient.
CHARLES S. WISE, Washington, D. C.

3:30 p.m. Orthopedic Management of Rheumatoid Spondylitis Patient.
MILTON C. COBEY, Washington, D. C.

4:00 p.m. The Present Status of Cortisone and ACTH.
EDWARD F. ROSENBERG, Chicago.

IN ROOM 3: DERMATOLOGY AND SYPHILOLOGY

1:30 p.m. Atopic Eczema.
EVERETT C. FOX, Dallas, Texas.

2:30 p.m. Industrial Dermatoses.
LOUIS SCHWARTZ, Washington, D. C.

3:30 p.m. Industrial Dermatoses.
LOUIS SCHWARTZ, Washington, D. C.

4:00 p.m. Treatment of Contact Dermatitis.
NORMAN R. INGRAHAM, Philadelphia.

IN ROOM 5: ROENTGEN DIAGNOSIS AND TREATMENT

JOSEPH F. BELAIR, Washington, D. C., Presiding

9:00 a.m. Radium and Roentgen Therapy in the Control of Vaginal Bleeding: Indications and Accomplishments.
RALPH M. CAULK, Washington, D. C.

9:30 a.m. The Problem of Endometriosis:
From the Standpoint of the Surgeon.
GARNET W. AULT, Washington, D. C.
From the Standpoint of the Gynecologist.
HENRY L. DARNER, Washington, D. C.
From the Standpoint of the Radiologist.
KARL C. CORLEY, Washington, D. C.

11:00 a.m. Roentgen Examinations as an Adjunct in Gynecology and Obstetrics.
FRED O. COE, Washington, D. C.

IN ROOM 14: LIVER DISEASE AND JAUNDICE

O. BENWOOD HUNTER JR., Washington, D. C., Presiding

1:30 p.m. Role of Porphyrins in Liver Disease.
CECIL J. WATSON, Minneapolis.

2:30 p.m. Clinical Relations of Skin Pigmentation in Liver Disease.
HAROLD J. JEGHERS, Washington, D. C.

3:30 p.m. Differential Diagnosis of Hemolytic Jaundice.
O. BENWOOD HUNTER JR., Washington, D. C.

4:00 p.m. Splenectomy: Its Use in Hemolytic States.
PAUL KIERNAN, Washington, D. C.

4:30 p.m. Uses of Newer Therapeutic Agents in Cirrhosis.
PETER D. COMANDURAS, Washington, D. C.

IN ROOM 5: CHRONIC DIARRHEAS

MATTHEW WHITE PERRY, Washington, D. C., Presiding

1:30 p.m. Modern Concept of Chronic Diarrhea.
ALBERT J. SULLIVAN, New Orleans.

2:00 p.m. The Clinical Aspects of Chronic Bacterial and Protozoal Diarrheas.
JOHN TILDEN HOWARD, Baltimore.

2:30 p.m. The Clinical Aspects of Chronic Noninfectious Diarrheas.
Benjamin V. White, Hartford, Conn.

3:30 p.m. Diarrheas of Organic Origin Other Than Bacterial and Protozoal.
Garnet W. Ault, Washington, D. C.

4:00 p.m. Nutritional and Associated Diarrheas.
Irwin L. Norman, Bethesda, Md.

4:30 p.m. Considerations in Differential Diagnosis in Chronic Diarrheas.
William T. Gibb Jr., Washington, D. C.

Thursday, Dec. 8, 1949

IN ROOM 310: DIABETES

Howard F. Root, Boston, Presiding

9:00 a.m. Anesthesias in Diabetes.
Louis K. Alpert, Washington, D. C.

Surgery in the Diabetic.
Leland S. McKittrick, Brookline, Mass.

Pregnancy and Diabetes.
Lawrence J. Thomas, Washington, D. C.

Louis K. Alpert, Washington, D. C., Presiding

1:30 p.m. I am a Diabetic. Nelson T. Carey, Baltimore.

Experimental Diabetes: Methods of Production and Possible Clinical Implications.
Joseph H. Roe, Washington, D. C.

The Brittle Diabetic.
Henry Mulholland, Charlottesville, Va.

IN ROOM 210: PROBLEMS OF DELIVERY

Howard P. Parker, Washington, D. C., Presiding

9:00 a.m. Obstetric Analgesia.
Charles H. Nash, Washington, D. C.

9:30 a.m. Management of Multiple Pregnancy.
Jean E. Paquin, Washington, D. C.

10:00 a.m. Forceps Delivery.
Samuel M. Dodek, Washington, D. C.

11:00 a.m. Uterine Inertia.
James F. Norton, Jersey City, N. J.

11:30 a.m. Episiotomy and Vaginal Lacerations.
Josiah R. Eisaman, Pittsburgh.

12:00 noon. Management of the Third Stage.
Howard P. Parker, Washington, D. C.

A. A. Marchetti, Washington, D. C., Presiding

1:30 p.m. Breech Delivery (Manikin).
Stafford W. Hawken, Washington, D. C.

2:00 p.m. Methods of Determining the Progress of Labor.
W. F. Mengert, Dallas, Texas.

2:30 p.m. Management of Occiput Posterior.
James A. Dusbabek, Washington, D. C.

3:30 p.m. Indications for Cesarean Section.
F. Bayard Carter, Durham, N. C.

4:00 p.m. Obstetric Anesthesia.
Charles S. Coakley, Washington, D. C.

4:30 p.m. Postpartum Hemorrhage.
A. A. Marchetti, Washington, D. C.

IN ROOM 307: PEDIATRICS

William S. Anderson, Washington, D. C., Presiding

9:00 a.m. Serious Ocular Infections of the Newborn.
Frank D. Costenbader, Washington, D. C.

9:30 a.m. Pediatric Problems in Orthopedics.
Carl Berg, Washington, D. C.

10:00 a.m. The Tonsil and Adenoid Problem in Children.
Edgar P. Copeland and Allan E. Walker, Washington, D. C.

11:00 a.m. The Treatment of Eosinophilic Granuloma by Chemotherapeutic Agents.
Harold W. Dargeon, New York.

11:30 a.m. Convulsions in Children.
M. G. Peterman, Milwaukee.

12:00 noon. Diagnostic Methods Used in the Neurologic Study of Children.
James W. Watts, Washington, D. C.

Milton M. Greenburg, Washington, D. C., Presiding

1:30 p.m. Breast Feeding.
Howard J. Morrison, Savannah, Ga.

2:00 p.m. Artificial Infant Feeding.
John F. Landon, New York.

2:30 p.m. Modern Trends in Infant Feeding.
Preston A. McLendon, Washington, D. C.

3:30 p.m. Complications of Contagious Diseases.
Robert R. Macdonald, Pittsburgh.

4:00 p.m. Immunization Procedures in Childhood.
William A. Howard, Washington, D. C.

4:30 p.m. Management of the Allergic Child.
Richard H. Todd, Washington, D. C.

IN ROOM 11: LABORATORY DIAGNOSIS; INCLUDING EXFOLIATIVE CYTOLOGY

Eugene R. Whitmore, Washington, D. C., Presiding

9:00 a.m. Spinal Fluid in Disease.
Arthur A. Morris, Washington, D. C.

9:45 a.m. Basal Metabolism Rate.
M. W. Alden, Washington, D. C.

11:00 a.m. Rh Antibodies.
William M. Silliphant, Washington, D. C.

11:45 a.m. Diseases of the Kidney and Kidney Function Tests.
Frank W. Konzelmann, Atlantic City, N. J.

Richard E. Palmer, Washington, D. C., Presiding

1:30 p.m. Laboratory Control of Dicumarol® Therapy.
E. Clarence Rice, Washington, D. C.

2:15 p.m. Biopsy Methods.
Thomas M. Peery, Washington, D. C.

3:30 p.m. Cytologic Diagnosis of Cancer.
J. E. Ash, Washington, D. C.

4:15 p.m. Sternal Marrow Aspirations.
J. R. Krevans, Washington, D. C.

IN ROOM 10: PHYSICAL MEDICINE AND REHABILITATION

9:00 a.m. Treatment of Low Back Pain.
Frank R. Ober, Boston.

9:30 a.m. Exercise as a Therapeutic Agent in General Practice.
Charles S. Wise, Washington, D. C.

10:00 a.m. Physical Medicine as Related to Internal Medicine.
George M. Piersol, Philadelphia.

11:00 a.m. The Place of Physical Devices and Apparatus in General Practice.
A. B. C. Knudson, Washington, D. C.

11:30 a.m. Teaching of Crutch Walking.
George Deaver, New York.

12:00 noon. Physical Medicine in Peripheral Vascular Disease.
Isadore Levin, Washington, D. C.

1:30 p.m. Opportunities in Physical Medicine and Rehabilitation for the General Practitioner.
Frank H. Krusen, Rochester, Minn.

2:00 p.m. Physical Medicine in the Treatment of Common Fractures.
Miland E. Knapp, Minneapolis.

2:30 p.m. Rehabilitation of the Hemiplegic Patient.
Howard A. Rusk and George Deaver, New York.

3:30 p.m. Prescribing Physical Treatment in General Practice.
Gordon M. Martin, Rochester, Minn.

4:00 p.m. Physical Medicine for the Neurologic Patient in General Practice.
Arthur L. Watkins, Boston.

4:30 p.m. Cerebral Palsy in General Medical Practice.
Winthrop M. Phelps, Baltimore.

IN ROOMS 12 AND 13: VIRUS AND RICKETTSIAL DISEASES

Norman Topping, Bethesda, Md., Presiding

9:00 a.m. Rocky Mountain Spotted Fever.
Norman Topping, Bethesda, Md.

9:30 a.m. Brill's Disease. Edward S. Murray, Boston.

10:00 a.m. General Discussion on Q Fever.
R. E. Dyer, Bethesda, Md.

11:00 a.m. Q Fever in California.
Joseph A. Bell, Bethesda, Md.

11:30 a.m. Rickettsialpox.
Robert J. Huebner, Bethesda, Md.

12:00 noon. Murine Typhus.
Theodore E. Woodward, Baltimore.

1:30 p.m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases.
Morris Schaffer, Atlanta, Ga.

1:50 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

2:10 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

2:30 p.m. Collection, Preparation and Shipment of Specimens for Diagnosis of Virus and Rickettsial Diseases.
Morris Schaffer, Atlanta, Ga.

3:30 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

3:50 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

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Morris Schaffer, Atlanta, Ga.

4:30 p.m. Isolation and Identification of the Virus and Rickettsial Agents.
Richard Mason, Washington, D. C.

4:50 p.m. The Serologic Diagnosis of Virus and Rickettsial Diseases.
Dorland Davis, Bethesda, Md.

IN ROOM 2: DISEASES OF THE CHEST

Sol Katz, Washington, D. C., Presiding

9:30 a.m. The Pathogenesis, Diagnosis and Treatment of Asthma. Maurice S. Segal, Boston.

9:45 a.m. Pleurisy with Effusion, Spontaneous Pneumothorax and Other Diseases of the Pleura.
L. L. Friedman, Birmingham, Ala.

11:00 a.m. Aerosol Therapy for Bronchopulmonary Disease. Maurice S. Segal, Boston.

11:30 a.m. Trauma of the Lungs and Pleura.
J. Maxwell Chamberlain, New York.

12:00 noon. Recent Advances in Fungus Diseases of the Lungs. Hyman E. Bass, New York.

Daniel L. Finucane, Glenn Dale, Md., Presiding

1:30 p.m. Medications and Practical Principles in the Management of Coughs.
Albert Worth Hobby, Atlanta, Ga.

2:00 p.m. Sarcoidosis. Sol Katz, Washington, D. C.

2:30 p.m. Differential Diagnosis of Chest Pain.
Hugh H. Hussey, Washington, D. C.

3:30 p.m. A Panel on Pulmonary Diseases Due to Inhalation of Certain Organic and Inorganic Dusts, with Comments on the Compensation Problems.
Anthony J. Lanza and Edgar Mayer, New York, and Oscar A. Sander, Milwaukee.

IN ROOM 1: FLUID BALANCE IN HEART FAILURE, IN RENAL IMPAIRMENT AND DEHYDRATION AND IN SHOCK

William L. Howell, Washington, D. C., Presiding

9:00 a.m. Renal Mechanisms in the Maintenance of Fluid and Electrolyte Balance.
A. C. Corcoran, Cleveland.

9:30 a.m. Dehydration: The Role of the Kidneys.
Robert J. Soberman, Washington, D. C.

10:00 a.m. Fluid Replacement in Dehydration.
Robert Elman, St. Louis.

11:00 a.m. The Clinical Features of Acute Renal Impairment.
William P. Herbst, Washington, D. C.

11:20 a.m. The Lower Nephron in Acute Renal Impairment. J. E. Ash, Washington, D. C.

11:40 a.m. What to Do and What Not to Do in Acute Renal Impairment.
Maurice B. Strauss, Framingham, Mass.

12:00 noon. Questions and Answers by the Members of the Panel.

Walter H. Moursund Jr., Washington, D. C., Presiding

1:30 p.m. Cardiac Mechanisms in Fluid Balance.
Jack Kleh, Washington, D. C.

2:00 p.m. Hemodynamic Changes in Heart Failure.
Reno R. Porter, Richmond, Va.

2:30 p.m. Pulmonary Edema.
James J. Feffer, Washington, D. C.

3:30 p.m. Therapy of Heart Failure to Achieve Fluid Balance: (*a*) Fluid Replacement; (*b*) Drug Therapy Influencing Fluid Balance.
Milton Landowne, Washington, D. C.

4:30 p.m. Summary: Questions and Answers by Drs. Kleh, Porter, Feffer, Landowne and Moursund.

IN ROOM 4: NEUROLOGY AND PSYCHIATRY

Pearce Bailey, Washington, D. C., Presiding

9:00 a.m. Highlights of the Neurologic Examination.
Paul Chodoff, Washington, D. C.

9:30 a.m. Today's Outlook for the Epileptic Patient.
Pearce Bailey, Washington, D. C.

10:00 a.m. Parkinsonism: The New Approaches.
Walter O. Klingman, Richmond, Va.

11:00 a.m. Practical Rehabilitation of the Paralyzed Patient.
Joe R. Brown, Rochester, Minn.

11:30 a.m. Migraine and Other Headaches.
Lester Blumenthal, Washington, D. C.

12:00 noon. Of What Use is the Electroencephalogram?
Harold Stevens, Washington, D. C.

John M. Caldwell, Washington, D. C., Presiding

1:30 p.m. Psychiatric Aspects of the Medical Examination.
Jacob E. Finesinger, Boston.

2:00 p.m. What is Psychosomatic Medicine?
John M. Caldwell, Washington, D. C.

2:30 p.m. What to Do with the Acute Psychiatric Emergency.
Oscar Legault, Washington, D. C.

3:30 p.m. Physical Complaints Masking Depression.
George N. Raines, Washington, D. C.

4:00 p.m. Electroshock Therapy.
Harold Stevens, Washington, D. C.

4:30 p.m. Psychosurgery.
Harry C. Solomon, Boston.

IN ROOM 312: CARDIOVASCULAR DISEASE, INCLUDING HYPERTENSION AND PERIPHERAL VASCULAR DISORDERS

Benjamin Manchester, Washington, D. C., Presiding

9:00 a.m. Arteriosclerosis: Brief Survey of Current Knowledge.
Charles F. Wilkinson Jr., New York.

9:45 a.m. Coronary Heart Disease: Recognition of Its Various Clinical Manifestations.
Clayton B. Ethridge, Washington, D. C.

11:00 a.m. Treatment in Coronary Heart Disease.
James S. Taylor, Washington, D. C.

11:45 a.m. Peripheral Vascular Disorders: Diagnosis and Medical Therapies.
Andrew G. Prandoni, Washington, D. C.

Albert D. Kistin, Washington, D. C., Presiding

1:30 p.m. Surgical Procedures in Peripheral Vascular Disorders.
J. Ross Veal, Washington, D. C.

2:15 p.m. Hypertension: Current Concepts and Clinical Classifications.
A. C. Corcoran, Cleveland.

3:30 p.m. Limits of Normal Blood Pressure: The Relation of Hypertension to Coronary Disease.
A. M. Master, New York.

4:15 p.m. Practical Management of Hypertensive Disease: Medical and Surgical.
Edward D. Freis, Washington, D. C.

IN ROOM 6: CANCER

Lester Neuman, Washington, D. C., Presiding

1:30 p.m. Recent Developments in Diagnosis and Treatment of Leukemia.
J. R. Krevans, Washington, D. C.

2:00 p.m. The Diagnosis and Treatment of Moles and Malignant Melanomas.
George T. Pack, New York.

2:30 p.m. The Diagnosis and Treatment of Carcinoma of the Lung.
Brian B. Blades, Washington, D. C.

3:30 p.m. Recent Developments in Cancer Research of Interest to the General Practitioner.
Harold L. Stewart, Washington, D. C.

4:00 p.m. The Practitioner's Obligation in the Care of the Advanced Cancer Patient.
Herbert S. Gates, Washington, D. C.

4:30 p.m. Recent Advances in the Use of Isotopes.
Robert J. Soberman, Washington, D. C.

IN ROOM 8: POLIOMYELITIS

Leonard Peterson, Washington, D. C., Presiding

1:30 p.m. The Management of Paralytic Poliomyelitis.
Jessie Wright, Pittsburgh.

3:30 p.m. The Management of Paralytic Poliomyelitis.
Jessie Wright, Pittsburgh.

IN ROOM 14: HEMATURIA

9:00 a.m. Introduction "Hematuria."
Albert E. Goldstein, Baltimore.

9:15 a.m. Hematuria and Traumatism.
Hilbert S. Sabin, Washington, D. C.

9:30 a.m. Hematuria and Prostatism.
H. A. Goldberg, Washington, D. C.

9:45 a.m. Cancer of Kidneys, Ureters and Bladder.
Fred K. Garvey, Winston Salem, N. C.

11:00 a.m. Hematuria and Calculus.
Dabney Jarman, Washington, D. C.

11:15 a.m. Hematuria and Infection.
F. A. Reuter, Washington, D. C.

11:30 a.m. Medical Aspects of Hematuria.
T. J. Abernathy, Washington, D. C.

12:15 p.m. Undiagnosed Hematuria.
Albert E. Goldstein, Baltimore.

IN ROOM 8: ARTHRITIS

Charles H. McEnerney, Washington, D. C., Presiding

9:00 a.m. Differential Diagnosis of Painful Conditions of Shoulder.
Darrell C. Crain, Washington, D. C.

9:30 a.m. Management of Painful Conditions of Shoulder.
William J. Tobin, Washington, D. C.

10:00 a.m. Diagnosis of Osteoarthritis.
Charles W. Wainwright, Baltimore.

11:00 a.m. Management of Osteoarthritic Patient.
J. Lawn Thompson Jr., Washington, D. C.

11:30 a.m. The Present Status of Cortisone and ACTH.
Edward J. Rosenberg, Chicago.

IN ROOM 3: DERMATOLOGY AND SYPHILOLOGY

1:30 p.m. Deep Fungus Infections.
Alfred M. Kligman, Philadelphia.

2:30 p.m. Treatment of Pyogenic Infections.
Walter O. Teichmann, Washington, D. C.

3:30 p.m. Treatment of Pyogenic Infections.
Walter O. Teichmann, Washington, D. C.

4:00 p.m. Drug Eruptions.
Harry M. Robinson Jr., Baltimore.

IN ROOM 5: ROENTGEN DIAGNOSIS AND TREATMENT

Eugene J. McDonald, Washington, D. C., Presiding

9:00 a.m. Mucosal Pattern of the Stomach.
Willy E. Baensch, Washington, D. C.

9:30 a.m. Tinea Capitus: Microsporon Audouini.
Isidore Lattman, Washington, D. C.

10:00 a.m. Lymphadenopathy: Causes and Treatment.
Keene M. Wallace, Washington, D. C.

11:00 a.m. Early Recognition and Prevention of Cancer of the Colon: Clinical, Proctoscopic and Roentgenologic Approach.
George M. Wyatt and Ralph M. Caulk, Washington, D. C.

11:30 a.m. The Radiological Examination Indicated for Localized and Referred Abdominal Pain.
Alfred A. J. Den and Thomas Bradley, Washington, D. C.

IN ROOM 14: LIVER DISEASE AND JAUNDICE

Paul Kiernan, Washington, D. C., Presiding

1:30 p.m. Present Concepts of Chronic Hepatitis.
John R. Neefe, Philadelphia.

2:30 p.m. Role of Blood and Blood Derivatives in the Therapy of Liver Disease.
John B. Ross, Washington, D. C.

3:30 p.m. Needle Biopsy of Liver.
Irving Brick, Washington, D. C.

4:00 p.m. Hepatomegaly.
Harold J. Jeghers, Washington, D. C.

4:30 p.m. Laboratory Aids in the Differential Diagnosis of Jaundice.
O. Benwood Hunter Jr., Washington, D. C.

IN ROOM 5: CHRONIC DIARRHEAS

Maurice H. Friedman, Washington, D. C., Presiding

1:30 p.m. Modern Concept of Chronic Diarrhea.
Albert J. Sullivan, New Orleans.

2:00 p.m. The Clinical Aspects of Chronic Bacterial and Protozoal Diarrheas.
John Tilden Howard, Baltimore.

2:30 p.m. The Clinical Aspects of Chronic Noninfectious Diarrheas.
Benjamin V. White, Hartford, Conn.

3:30 p.m. Diarrheas of Organic Origin Other Than Bacterial and Protozoal.
Garnet W. Ault, Washington, D. C.

4:00 p.m. Nutritional and Associated Diarrheas.
Irwin L. Norman, Bethesda, Md.

4:30 p.m. Considerations in Differential Diagnosis in Chronic Diarrheas.
William T. Gibb Jr., Washington, D. C.

Friday, Dec. 9, 1949

IN ROOM 310: DIABETES

Samuel Benjamin, Washington, D. C., Presiding

10:00 a.m. The Insulins.
Samuel Sugar, Washington, D. C.

Additional Aids for the Good Management of Your Diabetic Patient.
Maurice Protas, Washington, D. C.

Vascular Complications in the Diabetic.
William R. Jordan, Richmond, Va.

IN ROOM 210: PROBLEMS OF DELIVERY

John W. Walsh, Washington, D. C., Presiding

9:00 a.m. Management of Premature Labor.
Peter Commings, Washington, D. C.

9:30 a.m. Forceps Delivery (Manikin).
John W. Walsh, Washington, D. C.

10:00 a.m. Vaginal Lacerations and Episiotomy.
Louis H. Douglass, Baltimore.

11:00 a.m. Breech Delivery.
F. Bayard Carter, Durham, N. C.

11:30 a.m. Management of the Third Stage.
John E. Savage, Baltimore.

12:00 noon. Infant Resuscitation.
Joseph Kreiselman, Washington, D. C.

IN ROOM 307: PEDIATRICS

John E. Cassidy, Washington, D. C., Presiding

9:00 a.m. The Diagnosis and Treatment of Leukemia in Children.
Sidney Farber, Boston.

9:30 a.m. New Methods of Diagnosis and Treatment of Erythroblastosis Fetalis.
Louis K. Diamond, Boston.

10:00 a.m. Demonstration of Replacement Transfusion Technic in Infants.
John B. Ross, Washington, D. C.

11:00 a.m. Diagnosis and Management of Rheumatic Fever.
Mark P. Schultz, Bethesda, Md.

11:30 a.m. Clinical Manifestations of Rheumatic Fever.
Rachael Ash, Philadelphia.

12:00 noon. The Relation of the General Practitioner to the Objectives of the Midcentury White House Conference on Children and Youth.
Henry F. Helmholz, Rochester, Minn.

IN ROOM 11: LABORATORY DIAGNOSIS, INCLUDING EXFOLIATIVE CYTOLOGY

Theodore Winship, Washington, D. C., Presiding

9:00 a.m. Spinal Fluid in Disease.
Arthur A. Morris, Washington, D. C.

9:45 a.m. Basal Metabolism Rate.
William Dolan Jr., Washington, D. C.

11:00 a.m. Rh Antibodies.
William M. Silliphant, Washington, D. C.

11:45 a.m. Diseases of the Kidney and Kidney Function Tests.
Frank W. Konzelmann, Atlantic City, N. J.

IN ROOM 10: PHYSICAL MEDICINE AND REHABILITATION

9:00 a.m. Treatment of Low Back Pain.
Frank R. Ober, Boston.

9:30 a.m. Exercise as a Therapeutic Agent in General Practice.
Charles S. Wise, Washington, D. C.

10:00 a.m. Physical Medicine as Related to Internal Medicine.
George M. Piersol, Philadelphia.

11:00 a.m. The Place of Physical Devices and Apparatus in General Practice.
A. B. C. Knudson, Washington, D. C.

11:30 a.m. Teaching of Crutch Walking.
George Deaver, New York.

12:00 noon. Physical Medicine in Peripheral Vascular Disease.
Isadore Levin, Washington, D. C.

IN ROOMS 12 AND 13: VIRUS AND RICKETTSIAL DISEASES

Theodore E. Woodward, Baltimore, Presiding

9:00 a.m. Therapy of Rocky Mountain Spotted Fever.
Sydney Ross, Washington, D. C.

9:30 a.m. Therapy of Murine Typhus.
Emanuel B. Schoenbach, Baltimore.

10:00 a.m. Therapy of Atypical Pneumonia and Psittacosis.
Yale Kneeland Jr., New York.

11:00 a.m. Therapy of Lymphogranuloma Venereum.
Raymond C. V. Robinson, Baltimore.

11:30 a.m. Limitations of Therapy.
Frederick Bang, Baltimore.

12:00 noon. Round Table and Questions.

IN ROOM 2: DISEASES OF THE CHEST

Frank S. Ashburn, Washington, D. C., Presiding

9:00 a.m. Pulmonary Hemorrhage.
Osler A. Abbott, Emory University, Ga.

9:30 a.m. The Surgical Management of Bronchiectasis.
Herbert C. Maier, New York.

10:00 a.m. The Surgical Treatment of Lung Abscess.
Roy G. Klepser, Washington, D. C.

11:00 a.m. Bronchial Obstruction: Clinical and Bronchoscopic Observations (Motion Picture and Lantern Demonstration).
Paul H. Holinger, Chicago.

11:45 a.m. Clinical Aspects of Pulmonary and Mediastinal Neoplasms.
Foster Murray, Brooklyn.

IN ROOM 1: FLUID BALANCE IN HEART FAILURE, IN RENAL IMPAIRMENT AND DEHYDRATION AND IN SHOCK

Donald H. Stubbs, Washington, D. C., Presiding

9:00 a.m. Upset Physiology in Shock.
Weston Bruner Jr., Washington, D. C.

9:30 a.m. The Clinical Diagnosis of Shock.
Donald H. Stubbs, Washington, D. C.

10:00 a.m. Laboratory Aids in the Diagnosis and Treatment of Shock.
Richard H. Fischer, Washington, D. C.

11:00 a.m. Fluid Replacement in Shock, with Special Reference to Arterial Transfusions.
Sam F. Seeley, Washington, D. C.

11:25 a.m. The Biochemical Treatment of Shock.
A. G. Rink, Bethesda, Md.

11:50 a.m. Summary: Questions and Answers.
Robert Elman, St. Louis.

IN ROOM 4: NEUROLOGY AND PSYCHIATRY

George N. Raines, Washington, D. C., Presiding

9:00 a.m. The Alcoholic Patient.
Robert C. Burnham, Washington, D. C.

9:30 a.m. The Management of Anxiety.
Bernard A. Cruvant, Washington, D. C.

10:00 a.m. What is Psychotherapy?
Seymour J. Rosenberg, Washington, D. C.

11:00 a.m. Home and Office Treatment of Neurosyphilis.
Joseph Earle Moore, Baltimore.

11:30 a.m. The General Practitioner as the Front Line Psychiatrist.
Winfred Overholser, Washington, D. C.

12:00 noon. When and How to Refer the Patient Who Needs Psychiatric Treatment.
Robert W. Webb, Washington, D. C.

IN ROOM 312: CARDIOVASCULAR DISEASE, INCLUDING HYPERTENSION AND PERIPHERAL VASCULAR DISORDERS

Bernard J. Walsh, Washington, D. C., Presiding

9:00 a.m. Neurocirculatory Asthenia and Cardiac Neurosis.
Irving W. Winik, Washington, D. C.

9:45 a.m. The Heart in Endocrine Disorders and Dietary Deficiencies.
John M. Evans, Washington, D. C.

11:00 a.m. Heart Disease and Pregnancy: Management.
Benjamin Manchester, Washington, D. C.

11:45 a.m. The Cardiac Patient and Surgery.
Alphonse McMahon, St. Louis.

IN ROOM 14: HEMATURIA

9:00 a.m. Introduction "Hematuria."
Albert E. Goldstein, Baltimore.

9:15 a.m. Hematuria and Traumatism.
Herbert Wolff, Alexandria, Va.

9:30 a.m. Hematuria and Prostatism.
H. N. Dorman, Washington, D. C.

9:45 a.m. Cancer of Kidneys, Ureters and Bladder.
Hugh Jewett, Baltimore.

11:00 a.m. Hematuria and Calculus.
L. R. Culbertson, Washington, D. C.

11:15 a.m. Hematuria and Infection.
Edward Ferguson, Washington, D. C.

11:30 a.m. Medical Aspects of Hematuria.
Arnold McNitt, Washington, D. C.

12:15 p.m. Undiagnosed Hematuria.
Albert E. Goldstein, Baltimore.

IN ROOM 8: ARTHRITIS

Donald Ingham, Washington, D. C., Presiding

9:00 a.m. The Clinical Patterns of Rheumatoid Arthritis.
Thomas McPherson Brown, Washington, D. C.

9:30 a.m. Pathology of Rheumatoid Arthritis as Related to Symptomatology.
Lent Johnson, Washington, D. C.

10:00 a.m. Roentgen Picture of Rheumatoid Arthritis.
George Wyatt, Washington, D. C.

11:00 a.m. Medical Management of Patient with Rheumatoid Arthritis.
Darrell C. Crain, Washington, D. C.

11:30 a.m. Physical Medicine in Rheumatoid Arthritis.
Isadore Levin, Washington, D. C.

12:00 noon. Orthopedic Management of Patient with Rheumatoid Arthritis.
Carl Berg, Washington, D. C.

IN ROOM 5: ROENTGEN DIAGNOSIS AND TREATMENT

Aubrey O. Hampton, Washington, D. C., Presiding

9:00 a.m. Bronchial Occlusion and Spatial Rearrangement Within the Chest.
Harold I. Amory, Washington, D. C.

9:30 a.m. The Diagnosis and Treatment of Bronchiectasis.
Arthur C. Christie and Frank S. Ashburn, Washington, D. C.

11:00 a.m. The Correlation of Roentgen with Clinical Findings in the Diagnosis of Heart Disease.
William W. Stanbro and John M. Evans, Washington, D. C.

11:30 a.m. Pneumonia Due to Mineral Oils (Lipid Pneumonia).
Theodore Winship, Edward B. McCabe and Aubrey O. Hampton, Washington, D. C.

TELEVISION

There will be television broadcasts from Washington, D. C. and from Baltimore.

GRASS ROOTS CONFERENCE

The Sixth National Conference of County Medical Society Officers will be held in Washington, D. C., during the Clinical Session of the American Medical Association. The meeting is scheduled for December 8 at 8:00 p.m., in the Presidential Ballroom of the Hotel Statler. All doctors and their wives are invited to attend.

COMMUNITY HEALTH LEADERSHIP

Outstanding Local Achievements
  The Miracle of Flint.
    A. L. Tuuri, Medical Director, Mott Children's Center, Flint, Mich.
  Erie County Rings the Bell.
    Roy L. Scott, President, Medical Society of the County of Erie, Buffalo, N. Y.
National Programs Depend on Local Achievements
  The American Legion's Community Development Program.
    George N. Craig, National Commander, The American Legion, Brazil, Ind.
  The Program of the United Mine Workers.
    Warren F. Draper, Executive Medical Officer, Welfare and Retirement Fund, U. M. W. of America, Washington, D. C.
  The Doctor's Prognosis.
    Joseph Wall, Past President, Medical Society of the District of Columbia, Washington, D. C.

This program should be of interest not only to every medical society officer but also to every member. Community Health Leadership—the cooperation of doctors and laymen where it is needed most and can accomplish the most—is the theme.

IN ROOM 14: LIVER DISEASE AND JAUNDICE

Paul Kiernan, Washington, D. C., Presiding

1:30 p.m. Present Concepts of Chronic Hepatitis.
John R. Neefe, Philadelphia.

2:30 p.m. Role of Blood and Blood Derivatives in the Therapy of Liver Disease.
John B. Ross, Washington, D. C.

3:30 p.m. Needle Biopsy of Liver.
Irving Brick, Washington, D. C.

4:00 p.m. Hepatomegaly.
Harold J. Jeghers, Washington, D. C.

4:30 p.m. Laboratory Aids in the Differential Diagnosis of Jaundice.
O. Benwood Hunter Jr., Washington, D. C.

IN ROOM 5: CHRONIC DIARRHEAS

Maurice H. Friedman, Washington, D. C., Presiding

1:30 p.m. Modern Concept of Chronic Diarrhea.
Albert J. Sullivan, New Orleans.

2:00 p.m. The Clinical Aspects of Chronic Bacterial and Protozoal Diarrheas.
John Tilden Howard, Baltimore.

2:30 p.m. The Clinical Aspects of Chronic Noninfectious Diarrheas.
Benjamin V. White, Hartford, Conn.

3:30 p.m. Diarrheas of Organic Origin Other Than Bacterial and Protozoal.
Garnet W. Ault, Washington, D. C.

4:00 p.m. Nutritional and Associated Diarrheas.
Irwin L. Norman, Bethesda, Md.

4:30 p.m. Considerations in Differential Diagnosis in Chronic Diarrheas.
William T. Gibb Jr., Washington, D. C.

Friday, Dec. 9, 1949

IN ROOM 310: DIABETES

Samuel Benjamin, Washington, D. C., Presiding

10:00 a.m. The Insulins.
Samuel Sugar, Washington, D. C.

Additional Aids for the Good Management of Your Diabetic Patient.
Maurice Protas, Washington, D. C.

Vascular Complications in the Diabetic.
William R. Jordan, Richmond, Va.

IN ROOM 210: PROBLEMS OF DELIVERY

John W. Walsh, Washington, D. C., Presiding

9:00 a.m. Management of Premature Labor.
Peter Commings, Washington, D. C.

9:30 a.m. Forceps Delivery (Manikin).
John W. Walsh, Washington, D. C.

10:00 a.m. Vaginal Lacerations and Episiotomy.
Louis H. Douglass, Baltimore.

11:00 a.m. Breech Delivery.
F. Bayard Carter, Durham, N. C.

11:30 a.m. Management of the Third Stage.
John E. Savage, Baltimore.

12:00 noon. Infant Resuscitation.
Joseph Kreiselman, Washington, D. C.

IN ROOM 307: PEDIATRICS

John E. Cassidy, Washington, D. C., Presiding

9:00 a.m. The Diagnosis and Treatment of Leukemia in Children. Sidney Farber, Boston.

9:30 a.m. New Methods of Diagnosis and Treatment of Erythroblastosis Fetalis.
Louis K. Diamond, Boston.

10:00 a.m. Demonstration of Replacement Transfusion Technic in Infants.
John B. Ross, Washington, D. C.

11:00 a.m. Diagnosis and Management of Rheumatic Fever.
Mark P. Schultz, Bethesda, Md.

11:30 a.m. Clinical Manifestations of Rheumatic Fever.
Rachael Ash, Philadelphia.

12:00 noon. The Relation of the General Practitioner to the Objectives of the Midcentury White House Conference on Children and Youth.
Henry F. Helmholz, Rochester, Minn.

IN ROOM 11: LABORATORY DIAGNOSIS, INCLUDING EXFOLIATIVE CYTOLOGY

Theodore Winship, Washington, D. C., Presiding

9:00 a.m. Spinal Fluid in Disease.
Arthur A. Morris, Washington, D. C.

9:45 a.m. Basal Metabolism Rate.
William Dolan Jr., Washington, D. C.

11:00 a.m. Rh Antibodies.
William M. Silliphant, Washington, D. C.

11:45 a.m. Diseases of the Kidney and Kidney Function Tests.
Frank W. Konzelmann, Atlantic City, N. J.

IN ROOM 10: PHYSICAL MEDICINE AND REHABILITATION

9:00 a.m. Treatment of Low Back Pain.
Frank R. Ober, Boston.

9:30 a.m. Exercise as a Therapeutic Agent in General Practice.
Charles S. Wise, Washington, D. C.

10:00 a.m. Physical Medicine as Related to Internal Medicine. George M. Piersol, Philadelphia.

11:00 a.m. The Place of Physical Devices and Apparatus in General Practice.
A. B. C. Knudson, Washington, D. C.

11:30 a.m. Teaching of Crutch Walking.
George Deaver, New York.

12:00 noon. Physical Medicine in Peripheral Vascular Disease. Isadore Levin, Washington, D. C.

IN ROOMS 12 AND 13. VIRUS AND RICKETTSIAL DISEASES

Theodore E. Woodward, Baltimore, Presiding

9:00 a.m. Therapy of Rocky Mountain Spotted Fever.
Sydney Ross, Washington, D. C.

9:30 a.m. Therapy of Murine Typhus.
Emanuel B. Schoenbach, Baltimore.

10:00 a.m. Therapy of Atypical Pneumonia and Psittacosis. Yale Kneeland Jr., New York.

11:00 a.m. Therapy of Lymphogranuloma Venereum.
Raymond C. V. Robinson, Baltimore.

11:30 a.m. Limitations of Therapy.
Frederick Bang, Baltimore.

12:00 noon. Round Table and Questions.

IN ROOM 2: DISEASES OF THE CHEST

Frank S. Ashburn, Washington, D. C., Presiding

9:00 a.m. Pulmonary Hemorrhage.
Osler A. Abbott, Emory University, Ga.

9:30 a.m. The Surgical Management of Bronchiectasis.
Herbert C. Maier, New York.

10:00 a.m. The Surgical Treatment of Lung Abscess.
Roy G. Klepser, Washington, D. C.

11:00 a.m. Bronchial Obstruction: Clinical and Bronchoscopic Observations (Motion Picture and Lantern Demonstration).
Paul H. Holinger, Chicago.

11:45 a.m. Clinical Aspects of Pulmonary and Mediastinal Neoplasms. FOSTER MURRAY, Brooklyn.

IN ROOM 1: FLUID BALANCE IN HEART FAILURE, IN RENAL IMPAIRMENT AND DEHYDRATION AND IN SHOCK

DONALD H. STUBBS, Washington, D. C., Presiding

9:00 a.m. Upset Physiology in Shock.
WESTON BRUNER JR., Washington, D. C.

9:30 a.m. The Clinical Diagnosis of Shock.
DONALD H. STUBBS, Washington, D. C.

10:00 a.m. Laboratory Aids in the Diagnosis and Treatment of Shock.
RICHARD H. FISCHER, Washington, D. C.

11:00 a.m. Fluid Replacement in Shock, with Special Reference to Arterial Transfusions.
SAM F. SEELEY, Washington, D. C.

11:25 a.m. The Biochemical Treatment of Shock.
A. G. RINK, Bethesda, Md.

11:50 a.m. Summary: Questions and Answers.
ROBERT ELMAN, St. Louis.

IN ROOM 4: NEUROLOGY AND PSYCHIATRY

GEORGE N. RAINES, Washington, D. C., Presiding

9:00 a.m. The Alcoholic Patient.
ROBERT C. BURNHAM, Washington, D. C.

9:30 a.m. The Management of Anxiety.
BERNARD A. CRUVANT, Washington, D. C.

10:00 a.m. What is Psychotherapy?
SEYMOUR J. ROSENBERG, Washington, D. C.

11:00 a.m. Home and Office Treatment of Neurosyphilis.
JOSEPH EARLE MOORE, Baltimore.

11:30 a.m. The General Practitioner as the Front Line Psychiatrist.
WINFRED OVERHOLSER, Washington, D. C.

12:00 noon. When and How to Refer the Patient Who Needs Psychiatric Treatment.
ROBERT W. WEBB, Washington, D. C.

IN ROOM 312: CARDIOVASCULAR DISEASE, INCLUDING HYPERTENSION AND PERIPHERAL VASCULAR DISORDERS

BERNARD J. WALSH, Washington, D. C., Presiding

9:00 a.m. Neurocirculatory Asthenia and Cardiac Neurosis.
IRVING W. WINIK, Washington, D. C.

9:45 a.m. The Heart in Endocrine Disorders and Dietary Deficiencies.
JOHN M. EVANS, Washington, D. C.

11:00 a.m. Heart Disease and Pregnancy: Management.
BENJAMIN MANCHESTER, Washington, D. C.

11:45 a.m. The Cardiac Patient and Surgery.
ALPHONSE MCMAHON, St. Louis.

IN ROOM 14: HEMATURIA

9:00 a.m. Introduction "Hematuria."
ALBERT E. GOLDSTEIN, Baltimore.

9:15 a.m. Hematuria and Traumatism.
HERBERT WOLFF, Alexandria, Va.

9:30 a.m. Hematuria and Prostatism.
H. N. DORMAN, Washington, D. C.

9:45 a.m. Cancer of Kidneys, Ureters and Bladder.
HUGH JEWETT, Baltimore.

11:00 a.m. Hematuria and Calculus.
L. R. CULBERTSON, Washington, D. C.

11:15 a.m. Hematuria and Infection.
EDWARD FERGUSON, Washington, D. C.

11:30 a.m. Medical Aspects of Hematuria.
ARNOLD MCNITT, Washington, D. C.

12:15 p.m. Undiagnosed Hematuria.
ALBERT E. GOLDSTEIN, Baltimore.

IN ROOM 8: ARTHRITIS

DONALD INGHAM, Washington, D. C., Presiding

9:00 a.m. The Clinical Patterns of Rheumatoid Arthritis.
THOMAS MCPHERSON BROWN, Washington, D. C.

9:30 a.m. Pathology of Rheumatoid Arthritis as Related to Symptomatology.
LENT JOHNSON, Washington, D. C.

10:00 a.m. Roentgen Picture of Rheumatoid Arthritis.
GEORGE WYATT, Washington, D. C.

11:00 a.m. Medical Management of Patient with Rheumatoid Arthritis.
DARRELL C. CRAIN, Washington, D. C.

11:30 a.m. Physical Medicine in Rheumatoid Arthritis.
ISADORE LEVIN, Washington, D. C.

12:00 noon. Orthopedic Management of Patient with Rheumatoid Arthritis.
CARL BERG, Washington, D. C.

IN ROOM 5: ROENTGEN DIAGNOSIS AND TREATMENT

AUBREY O. HAMPTON, Washington, D. C., Presiding

9:00 a.m. Bronchial Occlusion and Spatial Rearrangement Within the Chest.
HAROLD I. AMORY, Washington, D. C.

9:30 a.m. The Diagnosis and Treatment of Bronchiectasis.
ARTHUR C. CHRISTIE and FRANK S. ASHBURN, Washington, D. C.

11:00 a.m. The Correlation of Roentgen with Clinical Findings in the Diagnosis of Heart Disease.
WILLIAM W. STANBRO and JOHN M. EVANS, Washington, D. C.

11:30 a.m. Pneumonia Due to Mineral Oils (Lipid Pneumonia).
THEODORE WINSHIP, EDWARD B. MCCABE and AUBREY O. HAMPTON, Washington, D. C.

TELEVISION

There will be television broadcasts from Washington, D. C. and from Baltimore.

GRASS ROOTS CONFERENCE

The Sixth National Conference of County Medical Society Officers will be held in Washington, D. C., during the Clinical Session of the American Medical Association. The meeting is scheduled for December 8 at 8:00 p. m., in the Presidential Ballroom of the Hotel Statler. All doctors and their wives are invited to attend.

COMMUNITY HEALTH LEADERSHIP

Outstanding Local Achievements
- The Miracle of Flint.
  - A. L. TUURI, Medical Director, Mott Children's Center, Flint, Mich.
- Erie County Rings the Bell.
  - ROY L. SCOTT, President, Medical Society of the County of Erie, Buffalo, N. Y.

National Programs Depend on Local Achievements
- The American Legion's Community Development Program.
  - GEORGE N. CRAIG, National Commander, The American Legion, Brazil, Ind.
- The Program of the United Mine Workers.
  - WARREN F. DRAPER, Executive Medical Officer, Welfare and Retirement Fund, U. M. W. of America, Washington, D. C.
- The Doctor's Prognosis.
  - JOSEPH WALL, Past President, Medical Society of the District of Columbia, Washington, D. C.

This program should be of interest not only to every medical society officer but also to every member. Community Health Leadership—the cooperation of doctors and laymen where it is needed most and can accomplish the most—is the theme.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit is located in Drill Hall, National Guard Armory, adjacent to the Technical Exhibit and Clinical Presentation Rooms.

Exhibits have been selected for their interest to the physician in the general practice of medicine and have been correlated with the clinical presentations so far as possible.

The Scientific Exhibit opens at noon Tuesday, December 6, and closes at 12:00 noon, Friday, December 9. It will be open on the intervening days from 8:30 a. m. to 6:00 p. m.

The office of the Committee on Scientific Exhibit is located in Space 103.

Committee on Scientific Exhibit.
Dwight H. Murray, Chairman.
E. J. McCormick.
F. J. L. Blasingame.
Morris Fishbein, ex officio.
George F. Lull, ex officio.
Thomas G. Hull, Director.

J. E. Smadel, Army Medical Department Research and Graduate School, Army Medical Center, Washington, D. C.:

Chloramphenicol: The exhibit consists of charts, posters and photographs showing the latest findings and results in the use of chloramphenicol.

Henry W. Edmonds, Armed Forces Institute of Pathology, Washington, D. C.:

Registry of Cardiovascular Pathology: The exhibit presents information concerning the Registry of Cardiovascular Pathology as a division of the American Registry of Pathology, a department within the Armed Forces Institute of Pathology, under the auspices of the National Research Council.

Lieut. Col. F. A. Todd, Veterinary Division, Office of the Surgeon General, Department of the Army, Washington, D. C.:

Rabies—Approved Methods for Control and Diagnosis: The exhibit consists of transparencies showing the distribution and incidence of rabies in the United States, control measures, laboratory procedure for diagnosis and approved methods of treatment of persons who have been exposed to rabid animals and those suspected of having the disease.

Lall G. Montgomery, American Society of Clinical Pathologists, Muncie, Ind.:

Certification of Medical Technologists—National Qualifying Board for Medical Laboratory Workers: The exhibit shows the functions and activities of the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists and its work of setting standards for medical laboratory workers. Booklets of information, lists of approved schools of Medical Technology, charts showing statistics on salaries and distribution of registrants are included.

Frank S. Ashburn, Richard H. Fischer and O. Benwood Hunter Jr., Doctors Hospital, Washington, D. C.:

Correlation of Cytology with Pathologic Lesions: The exhibit demonstrates a correlation of vaginal and sputum cytology with the associated pathologic lesions. An example of carcinoma in situ of the cervix diagnosed by cytologic technics and missed by biopsy technics and the reasons for missing the diagnosis histologically is demonstrated. The roentgenogram, sputum cytology and gross and microscopic pictures of the tumor are of representative cases of carcinoma of the lung. Technics and reasons for using cytology in conjunction with other diagnostic procedures are presented.

Section on Pathology and Laboratory Medicine of the Medical Society of the District of Columbia and the Washington Society of Pathologists, Washington, D. C.: A series of practical laboratory demonstrations will be given, including the following subjects:

Basal Metabolism: Correct method of performing tests; proper method of preparing patient in detail; interpretation in various diseases.

Sternal Marrow Aspirations: Technic, other sources of aspiration; diseases in which the procedure is useful.

Cytological Diagnosis of Cancer: Technic; advantages and disadvantages.

Acid Base Balance: Determination of total base by Sunderman method; plasma carbon dioxide.

Office Bacteriology: Procedures which the physician in general practice can do in his office; technic will be included.

Test of Hepatic Function: Intravenous phenolsulfonphthalein test; urea clearance; urea concentration and office test; Mosenthal and Fishberg test; Addis count.

Chlorides in Disease: Determination of blood and urine chlorides.

Diagnosis of Diabetes: Glucose tolerance; insulin tolerance, epinephrine tolerance; simple blood and urine test for glucose; simple blood and urine ketone test.

Rh Antibodies: Their classification and significance; procedures for making tests.

Opportunity will be given for instruction in making the tests, both to pathologists and to general practitioners in the conduct of small office laboratories. Applications of the results of the tests in the diagnosis and treatment of disease will be emphasized.

A complete library of books and periodicals dealing with clinical pathology will be on display for consultation by visitors.

A group of competent pathologists will be on duty continuously throughout the meeting in the various demonstration booths.

Miland E. Knapp and Ralph Worden, University of Minnesota, Minneapolis:

Physical Medicine and Rehabilitation in Fractures: Colles fracture was selected as a typical fracture requiring proper treatment and rehabilitation. The exhibit indicates the steps necessary in the reduction, splinting, physical therapy, occupational therapy and vocational rehabilitation of this fracture. It emphasizes the physiologic aspect of the care of fractures. Working models to show the effect of motion on circulation of the blood and lymphatics are presented.

Sedgwick Mead and Alex Harell, Washington University School of Medicine, St. Louis:

Physical Treatment of Low Back Pain: A study of the factors contributing to "chronic low backache" will be presented. Methods of physical treatment and rehabilitation will be demonstrated. Anatomic studies, electromyographic studies and physical therapeutic procedures will be discussed.

Howard A. Rusk, George G. Deaver, Donald A. Covalt and John F. Daly, New York University College of Medicine; Lawrence J. Linck and Jayne Shover, National Society for Crippled Children and Adults, and Herbert Koepp Baker, American Speech and Hearing Association:

Exhibit Symposium on Speech Rehabilitation: The exhibit will consist of four booths on different aspects of speech rehabilitation, cleft palate, cerebral palsy, articulation and stuttering. Each booth will be manned by a medical specialist particularly interested in that specific speech disorder, a speech pathologist and cases suffering from the various speech difficulties.

A. B. C. Knudson, Aram Glorig and Merle Ansberry, Physical Medicine Rehabilitation Division, Veterans Administration, Washington, D. C.:

Rehabilitation of the Hard of Hearing: This exhibit includes a demonstration of testing methods and an illustration of the complete program of hearing rehabilitation, including selection of hearing aids, speech reading, auditory training and speech conservation. Types of hearing aids and individual ear pieces will be exhibited also.

GORDON M. MARTIN and FRANK H. KRUSEN, Mayo Clinic, Rochester, Minn.:

Therapeutic Exercise: The exhibit will demonstrate the importance of therapeutic exercise as a clinical measure for use in many conditions seen in general practice. Actual programs of exercise as applied to several common pathologic conditions will be shown. The requirements for successful employment of therapeutic exercise will be presented.

LAWRENCE J. LINCK, National Society for Crippled Children and Adults, Chicago:

Nationwide Services for the Handicapped—Three Point Program: The exhibit deals with the nationwide services that the National Society offers through its more than 2,000 state and local affiliates to the handicapped, with special emphasis on cerebral palsy. Live demonstrations with crippled children will be presented and a group of professional therapists on the staff of the National Society will be available for consultation.

J. R. GARNER, Posture Research Institute, Inc., Elkhart, Ind.:

The Effects of Posture on the Human Body: The exhibit consists of graphs, drawings, roentgenograms, photographs, descriptions, pictures and diagrams dealing with different phases of the effects of posture on the human body.

HOWARD A. CARTER, Council on Physical Medicine and Rehabilitation, American Medical Association, Chicago:

Physical Medicine and Rehabilitation—Biophysics: An oscillator capable of generating electrical stimulations from 100 to 50,000 cycles per second will demonstrate the effect of alternating currents of varying frequency on the tissues. An instrument will be provided to show the resistance of the skin. The effect on the capillaries of heat and massage will be demonstrated by means of a special microscope.

VETERANS ADMINISTRATION HOSPITAL, Minneapolis, Minn.:

Retraining Therapy for Neurologic Disabilities: An exhibit illustrating the principles, types of treatment and results of treatment for disabling neurologic disabilities. Passive movement, active motion, resistance exercises, ambulation exercises, self care activities and social and vocational training are included in the treatment for hemiplegia, ataxias and multiple sclerosis, parkinsonism, flaccid paralysis and paraplegia. The exhibit is amplified by a film strip and by demonstrations with several patients.

A. F. CASTRO, GARNET W. AULT and ROBERT S. SMITH, Georgetown University School of Medicine, Washington, D. C.:

Adenomas of the Colon and Rectum—Pathology and Treatment: The exhibit includes specimens, photographs of specimens, roentgenograms, charts and drawings showing and emphasizing the diagnosis and types of treatment used in over 300 adenomas of the colon and rectum.

EVELYN YOUNG, District of Columbia Division, American Cancer Society, Inc., Washington, D. C.:

Cancer Detection in General Practice: This exhibit emphasizes the points in cancer detection "How You Can See, How You Can Feel and How You Can Hear," and advocates that every suspicious lesion be examined by a competent pathologist. Care taken in obtaining a good specimen will pay big dividends in more accurate diagnosis.

HERBERT WILLY MEYER and STEPHEN L. GUMPORT, Post-Graduate Medical School, New York University-Bellevue Medical Center, New York:

Cancer of the Breast: The exhibit shows historical aspects, differential diagnosis, principles of operation, criteria of operability, principles of cancer surgery technic, technic of radical mastectomy, palliative surgery for advanced or inoperable cancer of breast and hormone therapy for inoperable cancer of the breast.

B. S. OPPENHEIMER, E. T. OPPENHEIMER and A. P. STOUT, Columbia University, New York:

Sarcomas Induced in Rodents by Implanting Cellophane® or Polyethylene: Regenerated cellulose film (cellophane®) was implanted either subcutaneously or wrapped around one kidney of albino rats and on mice. Malignant tumors developed in about 35 per cent of the rats that survived the minimum time for induced tumors to appear after implantation of the cellulose film. The tumors were mostly fibrosarcomas. (The incidence of spontaneous sarcomas in rats is under 1 per cent.) Illustrations of the transplantability of the malignant tumors, the gross specimens and photomicrographs will be presented. The foregoing results should be taken into consideration in the surgical implantation of cellophane® or polyethylene in man.

ALEXANDER SYMEONIDIS, National Cancer Institute, Bethesda, Md.:

Experimentally Induced Eclampsia-like Condition in Rats: The exhibit presents transparencies in color of lesions of the liver, kidney and placenta, specimens mounted in plastic and a graphic illustration of the female body.

JOSEPH I. KEMLER and DAVID DAVIS, Sinai Hospital, Baltimore:

Bilateral Thyrotomy for Carcinoma of the Larynx—A New Procedure for Cancer of the Larynx: The exhibit shows drawing of carcinomas of the larynx suitable for the operation, biopsy in the indirect method, photomicrographs of specimens and plates of the different steps of the operation. A drawing of the larynx after operation is presented. Recorded speeches of patients made postoperatively are included.

MAJOR EDDY D. PALMER, M.C., United States Army, and PHYLLIS J. ANDERSON, Walter Reed General Hospital, Washington, D. C.:

Gastroscopic Views—Stomach Disease as Diagnosed by Gastroscopy: The exhibit presents illustrations of 56 gastroscopic views with the diagnosis of each. Gastroscope in place in moulage figure with illuminated view of gastric wall illustrates use and area seen by this method. Sketch indicates anatomic relationships of the instrument when in place.

ARTHUR A. MICHELE and FREDERICK J. KRUEGER, United States Marine Hospital, Staten Island, N. Y.:

Vertebral Body Biopsy vs. Roentgen Diagnosis: A trephine method for biopsy is presented. A series of approximately 10 cases will be presented wherein the vertebral body lesion diagnosis was left for the roentgenologist. There was no laboratory confirmation and no concomitant lesions or findings which would corroborate the roentgen observations. Roentgenograms of the lesion and a clinical summary are presented. After all available data has been presented a photomicrograph with a diagnosis is shown. The exhibit will demonstrate the need for an accurate diagnosis in vertebral body lesions for proper therapy, prognosis and in medical legal aspects of immensurable lesions.

HIRSCH MARKS, New York City Cancer Institute, New York:

Irradiation of Cancer Through A Grid: A new method of treatment of multicentric irradiation subdivides large portals into 1 by 1 cm. or 2 by 2 cm. fields, thereby diminishing backscattering, increasing skin tolerance and permitting application of higher roentgen dosage. This results in greater absorption of radiating energy in upper stratums of the tumor. In a case of metastatic epidermoid carcinoma of left supraclavicular region, primary unknown, with superior sulcus tumor syndrome, simultaneous multicentric irradiation led to gradual reduction in the size of the tumor, in centimeter by centimeter layers. Despite a high daily dosage, severe erythema of the skin appeared only at the end of the treatment, followed by desquamation and denudation. In eight weeks there was complete epithelialization of the skin, total eradication of the tumor and disappearance of pain in the left upper extremity and restoration of function to normal.

Cleveland J. White, Stritch School of Medicine, Loyola University, Chicago, and Robert H. Harris, Long Beach, Calif.:

Diseases of the Nails—Further Clinical Studies and Observations: Many cutaneous disorders affect the nails, and often the nails alone are involved. Some general diseases profoundly involve the nails. The exhibit includes studies which have been continued along all these lines.

David M. Cohen and Milton Goldin, Chicago Medical School and Mount Sinai Hospital, Chicago:

Superficial Fungus Infections—Methods of Diagnosis: The exhibit consists of photographs, charts and apparatus emphasizing cases which clinically suggest the possibility of a fungus infection and the steps to be taken to make an accurate diagnosis as to the genera and species. Although treatment on clinical suspicion may at times be necessary, a confirmed diagnosis is advisable. Since superficial fungus diseases are so prevalent, this subject deserves the attention of all physicians.

Walter I. Buchert and George H. Jones, Geisinger Memorial Hospital and Clinic, Danville, Penna.:

Hematuria: A demonstration is presented of the more common urologic causes of hematuria, including a schematic drawing listing all the possible causes of hematuria. Roentgenograms, photomicrographs, photograph of gross specimens and clinical data are used to present actual causes demonstrating some of the commoner causes of hematuria.

Frederick A. Reuter, W. Dabney Jarman, Edward E. Ferguson and L. R. Culbertson, George Washington University School of Medicine, Washington, D. C.:

Urography—Necessity for Complementary Retrograde or Intravenous Urogram: A false sense of security often is felt in the presence of pyelograms which, in fact, are inadequate; these should be complemented, or confirmed, by additional studies, either retrograde or intravenous, as the case may be. The exhibit illustrates this by selected pyelograms showing serious as well as insignificant conditions wherein diagnosis had not been possible without the more complete examination.

William Bickers, Richmond, Va.:

Uterine Contractions and Fertility: A series of charts will illustrate various patterns of uterine contractions in human beings and animals and a comparison drawn between the pattern seen in highly fertile animals and that seen in sterile or relatively sterile women. Suggestions on treatment are given.

Frederick H. Falls and Charlotte S. Holt, University of Illinois and Illinois State Department of Public Health, Chicago:

Breech Presentation: Breech presentation is depicted in relation to its etiologic aspects, diagnosis, pathologic changes and management, including fetal and maternal considerations and normal mechanism of breech.

A. S. Wiener and I. B. Wexler, Jewish Hospital of Brooklyn, Brooklyn:

Erythroblastosis Fetalis—Antenatal Diagnosis and Treatment by Exchange Transfusion: Charts present the serology of the eight Rh types and the 27 Rh-Hr types and their hereditary transmission. Charts explain the different methods of testing for and titrating Rh antibodies in the maternal serum, as well as for determining whether the husband is homozygous or heterozygous with respect to the Rh factor. The technic of performing exchange transfusion is presented, and the results in more than 65 cases of erythroblastosis fetalis are summarized. These show a substantial reduction in the mortality rate as compared with results with other methods of treating the disease.

Archibald Perrin Hudgins, Charleston, W. Va.:

Early Ambulation and Perineal Care—Obstetric and Gynecologic Questionnaire Reports: Questionnaires were sent to all United States obstetricians and gynecologists and to a representative group of general surgeons and general practitioners. The purpose was to determine the present thought and reactions toward (1) early ambulation and (2) postoperative perineal care. The results have been tabulated.

Jonas Weissberg, Thomas H. McGavack, A. M. Shearman and I. J. Drekter, New York Medical College, Metropolitan Hospital Research Unit. Welfare Island, N. Y.:

Potassium in Diabetes—Uncontrolled and Controlled Diabetic Ketosis and Acidosis: This exhibit will be a résumé of the changes in potassium balance obtained in 13 diabetic patients before and after the institution of adequate insulin and fluid therapy. The therapeutic implications will be presented: (1) the recognition of the "potassium-depletion syndrome," (2) frequent determinations of potassium in the serum should be made during the actively treated diabetic acidotic state and (3) the administration of potassium parenterally only when the serum level falls to critical or "near critical" levels.

Lester J. Palmer, Seattle, John A. Reed, Washington, D. C., and Frank N. Allan, Boston:

Diabetes: The American Diabetes Association, an organization of over 1,200 physicians and others interested in diabetes, strives to promote more widespread interest in the problems of diabetic persons among the medical profession. The purpose of its Diabetes Detection Drive is to bring to medical attention the million persons with undiagnosed diabetes and the many others known to have diabetes who neglect treatment. The standards of diagnosis approved by the Council of the American Diabetes Association are presented.

Louis I. Dublin, Donald B. Armstrong and Herbert H. Marks, Metropolitan Life Insurance Company, New York:

Progress in Diabetes—The Statistical Picture: Charts illustrate the trends in mortality from diabetes with data on sex, age, regional and other variations in mortality and morbidity from the disease, new life tables for diabetics showing the progressive increase in expectation of life and comparisons with the general population, factors influencing the longevity of diabetic persons, trends in the causes of death of diabetic persons and comparisons with causes of death in the general population.

Howard F. Root, Elliott P. Joslin, Priscilla White, Alexander Marble, Allen P. Joslin and Clifford Franseen, George F. Baker Clinic and New England Deaconess Hospital, Boston:

Diabetes Mellitus—Progress in Treatment: Charts and placards present follow-up data and causes of death in diabetes; results of treatment in pregnancy, coma and childhood diabetes are presented. Slides in color illustrate treatment of diabetic gangrene, especially the use of the transmetatarsal amputation.

Robert J. Coffey and Howard S. Madigan, Georgetown University Medical Center, Washington, D. C.:

Gastrointestinal Obstruction in the Newborn and Infant: The exhibit is a graphic depiction of the various common and rare types of developmental defects in the gastrointestinal tract which occur in the newborn and infant. These babies, who otherwise would expire in a short period of time, are enabled to live and develop normally as a result of surgical correction.

John H. Talbott, L. Maxwell Lockie and Bernard M. Norcross, Buffalo General Hospital, Buffalo, N. Y.:

Gouty Arthritis—Diagnosis and Treatment: The criteria for diagnosis of gouty arthritis are presented. Pertinent aspects of treatment are given together with some discoveries of the newer agents. Colored transparencies and roentgenograms will be projected on a screen.

AARON CHAVES and **VERA LEITES**, Bureau of Tuberculosis, New York:

Pulmonary Tuberculosis—Its Development in Persons Over 40 Years of Age: Pulmonary tuberculosis, formerly considered a disease of young people, has become of increasing importance in elderly persons. In New York City of 17,454 deaths from tuberculosis in the five year period 1942-1946, 10,496 (60 per cent) occurred in persons above 40 years of age. Two groups of cases are exhibited. Roentgenograms from the first group, patients over 40 years of age, show the development of pulmonary tuberculosis within a variable period after a normal roentgenogram of the chest had been obtained. The other group illustrates the frequently progressive course of minimal pulmonary tuberculosis in elderly persons. Increased attention of the family physician to the frequency and possible seriousness of pulmonary tuberculosis in elderly persons will lead to earlier diagnosis and treatment.

J. R. MCDONALD, L. B. WOOLNER, C. A. GOOD and **A. H. BULBULIAN**, Mayo Clinic, Rochester, Minn.:

Tumors of the Lung—A Pathologic and Roentgenographic Study of Surgical Lesions: The exhibit is based on experience with tumors of the lung as seen in the surgical pathology laboratory. It includes data on bronchogenic carcinoma, bronchial adenoma, pulmonary adenomatosis and alveolar cell tumor, hamartoma of the lung and miscellaneous and metastatic pulmonary tumors. The gross, microscopic and roentgenographic appearances of these tumors as seen in a large series of cases are demonstrated. The histogenesis, site of origin and rate of growth and metastasizing capacity of each group of tumors are demonstrated. Also included is the clinical value of cytologic examination of sputum and bronchial secretions as an aid in the diagnosis of bronchogenic carcinoma.

A. H. FINKELSTEIN and **LOUIS V. BLUM**, University of Maryland School of Medicine, Baltimore:

First Infection of Tuberculosis: This exhibit illustrates various phases of first infection of tuberculosis. The presentation is planned to acquaint the general practitioner with the favorable and unfavorable features of various phases of childhood tuberculosis. Roentgenograms and case histories will be presented to demonstrate the roentgen and clinical findings. Roentgenograms of several infants with miliary tuberculosis treated with streptomycin, promizole® (4, 2′-diamino-diphenyl-5′-thiazolesulfone) and para-aminosalicylic acid are shown.

C. HARWELL DABBS, E. CONVERSE PEIRCE II, FREEMAN L. RAWSON JR. and **JAMES L. SOUTHWORTH**, United States Marine Hospital, Baltimore:

Venous Disorders of the Lower Extremities—Pathologicophysiology: By the use of charts, drawings, manometric tracings of venous pressures, photographs and phlebograms, the pathophysiologic aspects of primary and secondary varicose veins and chronic venous insufficiency is illustrated. By the use of an indwelling polythene catheter inserted in an ankle vein and use of a direct writing electromonometer a characteristic walking pattern for normal and chronic venous insufficiency is demonstrated. The defect is corroborated by phlebograms. In addition to presentation of collected data, it is proposed to demonstrate the technic of direct writing venous pressure in the ankle vein, using the electromonometer, on both normal persons and those with chronic venous insufficiency.

ESTERINO ELIA SANTEMMA, Hempstead, N. Y.:

Disorders of the Heart Beat—New Method of Teaching: In order to facilitate the teaching of the disorders of the heart beat, electrocardiographic tracings have been superimposed on a diagrammatic heart. Briefly, the method employs four plates, the first being the master plate, which demonstrates in one view the major disorders and where they originate. The remaining three plates present sample electrocardiographic tracings, again showing the point of origin, and grouped for easy visualization. The work represents the views as presented in current textbooks on electrocardiography; only those views that make for simplicity of understanding have been adopted.

HAROLD STEVENS, Georgetown University School of Medicine, Washington, D. C.:

Electroencephalography: The principles, applications, limitations and correlation of electroencephalographic records with clinical and pathologic data will be presented. Representative tracings, with brief explanatory notes, typifying the more important diseases will be exhibited. Charts, photographs and statistical tables will be included, together with the electroencephalographic findings in various convulsive disorders.

M. B. BAWELL, G. O. BROUN and **G. E. THOMA**, St. Louis University School of Medicine, St. Louis:

Viral Pneumonias: This exhibit demonstrates the similarities of the common types of viral pneumonias. Included are a typical case history, roentgenogram of the chest and the laboratory aids available in cases of psitticosis, primary atypical (virus) pneumonia and influenzal pneumonia. A kodachrome® photomicrograph of the pathologic changes of each type is shown. Also included for comparison is a case of "Q" fever and a case of pneumococcic lobar pneumonia. A schematic description of the various laboratory tests employed in virus infections is shown.

JACOB J. WEINSTEIN, C. R. HARTMAN, JOHN M. MCCOY and **MAURICE S. RAWLINGS**, George Washington University School of Medicine and Hospital, Washington, D. C.:

Routine Anosigmoidoscopy and Anorectal Diseases: The technic of anosigmoidoscopy is described. The normal anatomy and its relationship to the anorectal diseases is included. Each of the common anorectal diseases is described by symptoms, gross picture and anoscopic appearance and treatment. The incidence of these lesions is included from a large series of patients seen in a medical clinic for complaints entirely unrelated to anorectal diseases. The relationship of these lesions to malignancy is shown. The use of a liquid analgesic agent for the local discomforts associated with anorectal diseases is presented. The theme of the exhibit is to teach every general practitioner the value of routine anosigmoidoscopic examination in the diagnosis and treatment of anorectal diseases.

T. H. SELDON, American Association of Blood Banks, Rochester, Minn.:

Banking America's Blood: The exhibit depicts the purposes and aims of the American Association of Blood Banks and describes the educational program and other services being offered to blood banks throughout the United States and elsewhere.

HART E. VAN RIPER, National Foundation for Infantile Paralysis, Inc., New York:

Treatment of Infantile Paralysis: Many unique devices especially designed for the orthopedically handicapped patient are demonstrated in an exhibit outlining the seven stages of treatment of infantile paralysis. Pictured are innovations such as arm and finger supports, eating utensils, remote control typewriters and leg braces. Based on the treatment methods employed at Georgia Warm Springs Foundation, the exhibit depicts the essential steps in the over-all care of the patient.

BUREAU OF MEDICINE AND SURGERY, Navy Department, Washington, D. C.:

Two Worlds—Or One: The exhibit highlights venereal disease, appraisal, planning and control, not as two distinct entities —two worlds, civilian and military, separately battling the same problem—but one world, in which military and civilian participation will lead to a control program of mutual responsibility with more effectiveness than has been possible in the past.

J. Q. GRIFFITH JR. and **J. F. COUCH**, U. S. Department of Agriculture, Philadelphia:

Medical Therapy in Relation to Retinal Hemorrhage: It is believed that retinal hemorrhage results from fault in the vascular wall, or abnormality in blood coagulation, or both. Fault in vascular wall is frequently demonstrated by increased capillary fragility (Gothlin test) or increased capillary permeability (increased cutaneous lymphatic flow by the patent blue method). Both of these tests will be demonstrated so far as possible using subjects with recent retinal hemorrhage. Tests for blood coagulation at various stages will be demonstrated. Results of rutin therapy will be illustrated, and therapy with hesperidin, vitamin K, dicumarol,® vitamin E, protamine sulfate and diet will be considered.

Raymond W. Cunningham, A. C. Dornbush, B. M. Duggar and B. K. Harned, Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.:

Studies on Aureomycin Hydrochloride: The exhibit consists of charts and posters showing the isolation of aureomycin, a new antibiotic, together with reports on pharmacologic, bacteriologic and other laboratory studies. The clinical uses and indications for the use of aureomycin are included.

Frank L. Meleney and Balbina A. Johnson, Columbia University College of Physicians and Surgeons, New York:

Bacitracin Therapy in Surgical Infections: Charts show analysis of results in 270 patients treated systemically with bacitracin. The exhibit includes photographs, kodachrome® slides, temperature curves, blood and urine levels, antibacterial spectrum of bacitracin, synergism between penicillin and bacitracin "in vitro" and "in vivo," incidence in acute and chronic infections of strains of susceptible species of bacteria resistant to penicillin and bacitracin.

A. W. Freireich and J. W. Landsberg, Meadowbrook Hospital, Hempstead, N. Y.:

Amphetamine Sulfate Therapy of Acute Barbiturate Poisoning: Charts demonstrate the increased incidence of acute barbiturate poisoning. An outline of treatment of acute poisoning by the intravenous use of amphetamine sulfate is presented, with a summary of the results in 85 cases and representative charts of the blood pressure readings and pulse rates in 2 typical cases.

Leslie N. Gay and Paul E. Carliner, Johns Hopkins University School of Medicine, Baltimore:

Motion Sickness: The exhibit deals with the prevention and treatment of sea sickness, air sickness and other forms of nausea.

Rudolph Jaeger and William Whiteley Jr., Jefferson Medical College and Hospital, Philadelphia:

Intracranial Aneurysms: The exhibit shows the anatomy, symptoms, roentgenographic findings, pathology and surgical treatment of aneurysms of the intracranial carotid system.

Franklin M. Foote, Willis S. Knighton and Virginia Smith Boyce, National Society for the Prevention of Blindness, New York:

Early Recognition of Glaucoma Saves Sight: The exhibit shows signs and symptoms of glaucoma which are easily recognizable during a general physical checkup. Suggested procedures for control of glaucoma by industrial and public health groups are charted. Demonstration of tonometry and testing visual fields is included.

Arthur A. Morris, Doctors Hospital and Georgetown University Hospital, Washington, D. C.:

Surgical Treatment of Psychomotor Epilepsy: This procedure is an original one, never before carried out. Severe psychomotor epilepsy has been operated on when medical therapy has failed, with good results and a high percentage of cures. The rational for this procedure is shown, together with demonstration of the need for help in the group and the number of patients that can return to normal work.

Special Exhibit Committee on Fractures, American Medical Association:

Kellogg Speed, Chicago, Chairman.
Gordon M. Morrison, Boston.
Frederick A. Jostes, St. Louis.

The Washington representative of the Committee is Leonard T. Peterson. A series of practical demonstrations will be presented in three booths, covering the following subjects:

Compression Fracture of the Spine.

Fractures of the Radius—Lower End.

Fractures of the Ankle.

The purpose of the exhibit is to stress elementary points in treatment based on the pathology of each type of fracture for instruction of the physician in general practice.

A pamphlet, giving the essential points of the exhibit, has been prepared for distribution.

A large group of competent demonstrators will assist the committee in the presentation of the exhibit.

Charles F. Branch, American College of Surgeons, Chicago.

The American College of Surgeons and the General Practitioner: The exhibit consists of charts, posters and photographs focusing attention on the several activities of the American College of Surgeons and depicting how these various functions best serve the interests of the general practitioner as well as the specialty groups. These services attempt to elevate the level of the practice of medicine and thus the care of all patients through constantly improving all facilities and elements that go into such services.

J. Ross Veal, John Shadid and Thomas J. Dugan, Georgetown University School of Medicine, Washington, D. C.:

Surgery of the Sympathetic Nervous System: The exhibit presents demonstration of the anatomy and physiology of the sympathetic nervous system, showing the clinical application to various vascular diseases. Indications and results of sympathetic surgery are included.

John Fallon, John J. Manning, James T. Brosnan, John Meyers and William G. Moran, Fallon Clinic, Worcester, Mass.:

Endometriosis and the General Surgeon: Endometriosis is not a problem for the gynecologist alone. It is met fairly frequently in general surgery and general practice, and more women are seen with endometriosis than with appendicitis. Four hundred cases are analyzed to illustrate diagnostic pitfalls, including occurrence in youth; infrequently described lesions are exhibited, and a diagnostic syndrome is suggested: (*a*) cumulatively increasing period-linked pain, (*b*) in a mature woman without young children.

Joseph L. Posch, City of Detroit Receiving Hospital and Wayne University College of Medicine, Detroit:

Care of the Injured Hand: The exhibit consists of a presentation of the importance of care of hand injuries and an outline of the early treatment. Tendon and nerve injuries, human bites, burns and amputations are briefly discussed. Illustrative cases are presented.

Alfred J. Suraci, Georgetown University Medical Center, Washington, D. C.:

Maxillofacial and Reconstructive Surgery: The exhibit presents preoperative and postoperative photographs of congenital and acquired defects with methods of repair. Preoperative and postoperative models are included.

William C. Meloy and Gordon S. Letterman, George Washington University School of Medicine, Washington, D. C.:

Reconstructive Surgery: The exhibit shows repair of chronic ulcerations, the trophic ulcer problem in the paraplegia, repair of other large defects and general plastic surgical problems of interest to the general practitioner.

J. Brown Farrior and R. A. Bagby, Tampa Municipal Hospital, Tampa, Fla.:

The Fenestration Operation: The exhibit portrays the history, indications, technic and immediate and lasting results of the fenestration operation. The diagnosis of otosclerosis is outlined.

The selection of patients for the fenestration operation is described in audiogram and tuning fork tests. The technic is illustrated by anatomic drawings and a series of temporal bone dissections. The immediate and lasting results are illustrated by graphic charts.

FREDERICK A. BOTHE and RICHARD H. DRISCOLL, Presbyterian Hospital, Philadelphia:

Lesions of the Thyroid Gland: The exhibit shows the histologic picture in diffuse toxic gland, effect of iodine, thiouracil and propylthiouracil; types of chronic thyroiditis· adenomas; carcinoma, before and after irradiation; nontoxic goiter, and sarcoma.

OLIVER FIELD, Bureau of Investigation, American Medical Association, Chicago:

Mechanical Quackery: The exhibit deals with mechanical quackery, both historical and current, using the gadgets themselves and demonstrating such cure-alls as the "radioclast" and the Ghadiali "spectro-chrome."

J. HOWARD BEARD, United States Public Health Service, Washington, D. C.:

Opportunity in the United States Public Health Service: The exhibit presents some of the advantages of a career in the Public Health Service.

GEORGE COOLEY, Council on Medical Service, American Medical Association, Chicago:

Voluntary Health Insurance: The exhibit shows the percentage of persons enrolled in voluntary health insurance in each state, as well as special studies on the operations, growth and availability of voluntary health insurance.

MOTION PICTURES

Motion pictures will be shown in the Motion Picture Theater, Room 9, adjacent to the Scientific Exhibit. The following films will be shown daily throughout the week:

LEROY A. SCHALL, Massachusetts Eye and Ear Infirmary, Boston, in cooperation with the American Cancer Society:

Rehabilitation of Patients Who Have Undergone Laryngectomy: This motion picture demonstrates the principles of the methods used in teaching patients who have undergone laryngectomy the use of the esophageal voice. Animation is used to outline the surgical procedures involved and to illustrate the actual physical processes brought into play, in swallowing and expelling air to induce eructation. Sound, fifteen minutes.

H. J. HOLLOWAY and E. S. BURGE, Northwestern University Medical School, Chicago, and Evanston Hospital, Evanston, Ill.:

Manual Rotation in the Management of Occiput—Posterior and Occiput Transverse Positions: Motion picture presents a method of delivery by manual rotation and forceps extraction. The position, diagnosis and complete procedure are explained and clearly illustrated. Silent, thirty-two minutes.

EUGENE F. DUBOIS, Cornell University Medical College, New York; ROBERT ELMAN, Washington University, St. Louis, and HERBERT POLLACK, Mount Sinai Hospital, New York:

Malnutrition in the Hospital Patient: This film depicts the nutritional needs of hospital patients, especially surgical patients. Sound, thirty minutes.

H. J. SEDDON, Oxford University, London, England:

Diagnosis and Management in Poliomyelitis: The motion picture deals with a careful review of the diagnostic signs of early and more advanced poliomyelitis from the time of the earliest symptoms until the last stage of a well planned program of rehabilitation. It illustrates the incidence of poliomyelitis in Great Britain. Sound, fifty-seven minutes.

JOHN B. ROSS and O. BENWOOD HUNTER JR., Washington, D. C.:

Exchange Transfusion: In this motion picture an erythroblastotic infant is shown, with details of equipment and technic of transfusion for removal and replacement of blood. Silent, fifteen minutes.

AMERICAN CANCER SOCIETY, New York, and NATIONAL CANCER INSTITUTE, United States Public Health Service, Bethesda, Md.:

Diagnosis of Cancer of the Breast: Sound, thirty-five minutes.

H. E. NIEBURGS, EDGAR R. PUND, S. BAMFORD and HOKE WAMMOCK, University of Georgia, School of Medicine, Augusta, Ga.:

Diagnosis of Cancer by Exfoliative Cytology: The motion picture demonstrates: (1) the method of taking vaginal and endocervical smears; (2) normal cytologic changes during the menstrual cycle, pregnancy and the menopause; (3) diagnosis of preinvasive and invasive cancer of the cervix uteri, illustrating the morphology between these two types of cervical cancer; (4) diagnosis of endometrial cancer; (5) sources of error in the cytologic interpretation, and (6) diagnosis of cancer from other body fluids, such as sputum, bronchial aspiration, gastric lavage and prostatic fluid. Silent, thirty minutes.

JOHN C. JONES, Children's Hospital, Los Angeles:

Coarctation of the Aorta: This motion picture reviews the embryology, anatomy and physiology of coarctation of the aorta, outlines the clinical features and roentgen findings and illustrates the resection of a coarctation with end to end anastomosis. Sound, twenty-seven minutes.

LOYAL DAVIS, American College of Surgeons, Chicago:

Peripheral Nerve Injuries: Sound, thirty-one minutes.

VETERANS ADMINISTRATION, Department of Medicine and Surgery, Washington, D. C.:

Surgical Approach to the Shoulder Joints: A technical film on the fundamentals underlying the surgical approach to the shoulder joints. Sound, thirty minutes.

ARTHUR C. CORCORAN, DON CARLOS HINES and IRVINE H. PAGE, Lilly Laboratory for Clinical Research, Indianapolis:

Kidney Function in Disease: This motion picture is a sequel to the film "Kidney Function in Health." It begins with a discussion of the renal pressor system and then proceeds to show the changes in structure and function of the kidneys in hypertension, glomerulonephritis, pyelonephritis, renal calculus, crush syndrome and certain other conditions. The metabolism of water, electrolytes, acids and bases is discussed so far as it pertains to renal function. Sound, forty-six minutes.

ISOLATION HOSPITALS, LOS ANGELES, SAN FRANCISCO and OAKLAND, CALIF., through the cooperation of the local Public Health Departments:

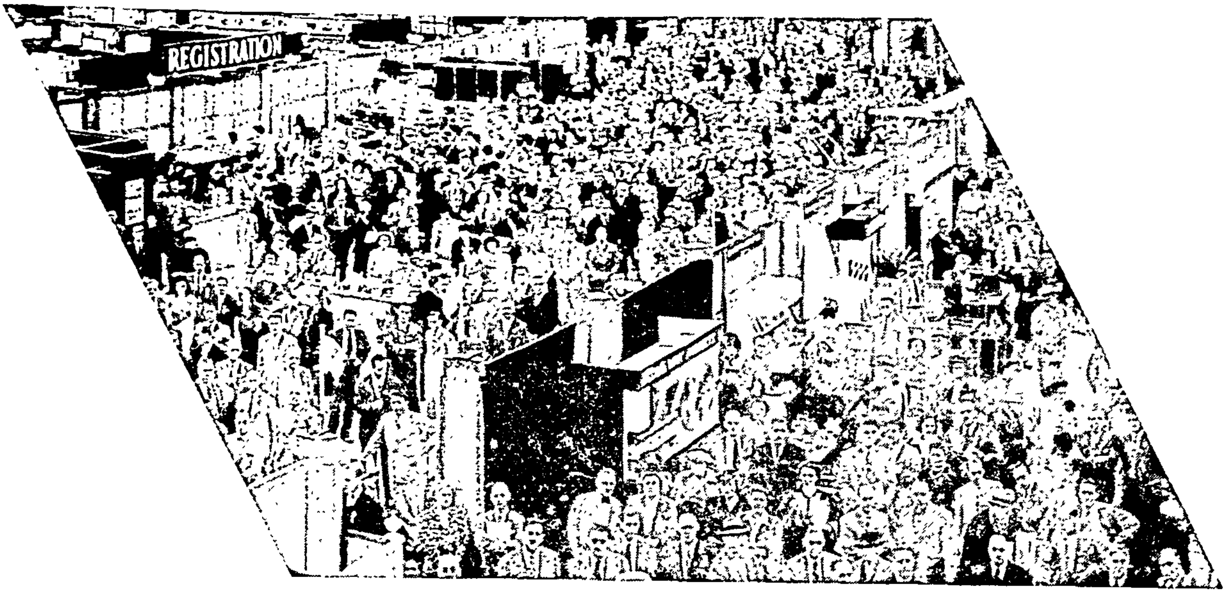
Communicable Diseases: This motion picture illustrates the various aspects of common virus and bacterial diseases among children, although some cases among adults are shown. It presents the clinical manifestations, mode of transmission, incubation period, prodrome, syndrome, differential and direct diagnosis and course of each disease. Sound, thirty-five minutes.

CHARLES F. MCCUSKEY, Glendale, Calif.:

Endotracheal Anesthesia: This film presents a few of the basic requirements for endotracheal anesthesia. Specific apparatus for endotracheal intubation, including laryngoscopes, endotracheal tubes and cuffs, is demonstrated. Sound, twenty-five minutes.

AMERICAN MEDICAL ASSOCIATION, in cooperation with the COMMITTEE ON TECHNICAL ADVISERS of the UNITED STATES ARMY, UNITED STATES PUBLIC HEALTH SERVICE and the AMERICAN RED CROSS:

They Also Serve: This motion picture stresses the physician's responsibility in the event of a major disaster. It emphasizes the importance of organizing and supporting local emergency committees and points out the importance of thorough planning, so that physicians may be ready for any emergency. Sound, seventeen minutes.



the Technical Exposition

How can the family physician keep abreast of quickly advancing diagnostic and treatment technics? What are the *new* improvements in products needed in the combat against disease? How do these advances serve you and your patients?

At this third A. M. A. Clinical Session, the Technical Exhibits aid in answering these and other questions. Planned primarily to teach rather than to sell, they make available to the General Practitioner the equipment and services needed for diagnosis and treatment. The exhibits demonstrate brilliantly how drug manufacturers, medical publishers, and suppliers give the profession outstanding service, cooperation, and support. In each booth, qualified representatives present information on subjects of mutual interest.

The Exposition will open at 8: 30, Tuesday morning, December 6, and remain open each day until 6: 00 P. M. except on Friday, December 9. On this day the exhibits close at 12: 00 o'clock noon.

Following are brief notices to give you a general idea of what may be seen in the Technical Exhibits. Plan to visit them often.

THOS. R. GARDINER
Director of Technical Exhibits.

ABBOTT LABORATORIES

North Chicago, Ill.
Booth A-19

Tridione, a synthetic drug for the control of the petit mal triad, and Desoxyn, a cerebral stimulant and vasopressor agent, are featured in the Abbott Laboratories exhibit. Two illuminated pictures behind transparent mirrors illustrate the "before" and "after" story of Tridione therapy in petit mal. Four illuminated transparencies review the advantages of Desoxyn as to dosage, action and side-effects.

A. S. ALOE COMPANY

St. Louis, Mo.
Booths C-10, 12

Another one of our regular exhibitors is with us again this year. The A. S. Aloe Company with home offices in St. Louis has recently opened a branch at 1501 14th St., N.W., Washington, D. C., with the prime objective to better serve their many friends on the eastern seaboard. Their attractive display includes surgical, medical and laboratory supplies with particular emphasis on the latest developments in physical therapy equipment and surgical instruments.

AMERICAN HOSP. SUPPLY CORP.

Evanston, Ill.
Booth C-1

Many important items comprise this exhibit: the entire range of Baxter Parenteral Products, Solutions, Dispensing Sets, Blood Transfusion Equipment as well as Disposable Plastic Catheters; the full list of American Blood Testing Serums prepared by Dade County Blood Bank and Mt. Sinai Hospital, Chicago; the new Staticator for the detection and warning of perilous static electricity in operating rooms; the recently announced Cholelithophone, an electro-acoustic device for the location at operation of gallstones in the common and hepatic ducts; Aero-Klenz, a professional hospital deodorant that destroys prevailing hospital odors quickly and thoroughly; and a selected group of supplies and equipment designed to further the ends of better hospital service.

AMES COMPANY, INC.

Elkhart, Ind.
Booth A-20

Every doctor will be interested in the Selftester featured in the Ames booth. This is an inexpensive urine-sugar detection kit containing two Clinitest tablets. The Selftester is designed for public use and is approved by the American Diabetes Association as an aid to help detect the "million unknown diabetics" and to bring them under a physician's care.

APPLETON-CENTURY-CROFTS, INC.
New York, N. Y.
Booth A-16

Appleton-Century-Crofts has on display such important new titles as OPERATIVE TECHNIC IN GENERAL AND SPECIALTY SURGERY by 55 American surgeons; W. Wallace Morrison's EAR, NOSE AND THROAT; new revisions of John Kolmer's CLINICAL DIAGNOSIS; Wallace Yater's INTERNAL MEDICINE; Thomson & Negus' NOSE AND THROAT; Kelly & Hite's MICROBIOLOGY; Zinsser's BACTERIOLOGY and many other standard texts. Experienced attendants will gladly answer queries and supply detailed information.

THE GORDON ARMSTRONG CO., INC.
Cleveland, Ohio
Booth D-16

The Armstrong X-4 Baby Incubator shown here is well worth a special trip for inspection. Tested and approved by Underwriters' Laboratories and Canadian Standards Association, it also stands accepted by the Council on Physical Medicine and Rehabilitation of The American Medical Association. At the Washington Session no orders are being solicited; the Incubator is in operation for demonstration and questions only.

ASSOCIATED MEDICAL CARE PLANS
Chicago, Illinois
Booth A-2, 4

Associated Medical Care Plans offer an educational and informative exhibit showing the contributions made by the physicians of the United States and Canada in developing and supporting the Blue Cross and Blue Shield Plans, together with a brief summary of the importance of these Plans in making prepaid health available to the public on a prepayment basis.

AYERST, McKENNA & HARRISON, LTD.
New York, N. Y.
Booth C-25

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conjugated estrogens (equine)—may be had in C-25. The potency of "Premarin" expressed in terms of its principal estrogen, sodium estrone sulfate, provides convenience of administration with flexibility of dosage. Four potencies of "Premarin" Tablets and the liquid form are presented.

W. A. BAUM CO., INC.
New York, N. Y.
Booth C-3

The big "news" here is the Baumanometer AIR-LOK Cuff. The simplicity and unique effectiveness of this new blood-pressure cuff is attained by making the air pressure in the rubber bag do the work. No metal part of any kind is employed. The new PHLEBAUMANOMETER (Burch and Winsor)—for determining the blood-pressure in large and small veins—as well as all current models of the Lifetime BAUMANOMETER will also attract your attention.

BECK-LEE CORPORATION
Chicago, Ill.
Booth D-13

This exhibit features the Beck-Lee Quartz String Electrocardiograph with the Record Automatic Camera. This self-developing camera enables the physician to obtain a permanently developed true quartz string cardiogram as the patient is being tested. This remarkable camera performs, in about four seconds, the entire dark room developing and fixing process which normally takes fifteen minutes to a half-hour in the dark room.

BEECH-NUT PACKING COMPANY
Canajoharie, N. Y.
Booth C-6

Beech-Nut nutritionists in attendance at their booth will welcome your discussion of the Strained and Junior Foods. Their newest product, Beech-Nut Cereal Food, is also displayed. It is a scientifically prepared blend of enriched farina, oatmeal, defatted wheat germ, cornmeal, defatted corn germ, powdered beef bone, dried Brewer's yeast, salt and sodium iron pyrophosphate.

THE BEST FOODS, INC.
New York, N. Y.
Booth D-17

The Best Foods, Inc., is exhibiting Nucoa, the wholesome, nutritious, vegetable margarine, which contains 15,000 units of vitamin A to the pound. Ask to taste Hellmann's Real Mayonnaise and other famous Best Foods' products. You have a treat in store for you. Miss Elsie Stark, Director of Consumer Education, in charge of the booth, will welcome questions about the products.

THE BLAKISTON COMPANY
Philadelphia, Pa.
Booth F-4

See BLAKISTON'S NEW GOULD MEDICAL DICTIONARY. This modern, up-to-date, dictionary contains more new words than any other medical dictionary, 252 illustrations (129 in color) and a complete anatomical atlas—the first completely new unabridged medical dictionary in 38 years. Easier to use, more complete, more accurate, BLAKISTON'S NEW GOULD is the keystone for a full line of texts and reference books. Blakiston representatives will be happy to help you find the book you desire.

JOHN H. BRECK, INC.
Springfield, Mass.
Booth B-12

The Breck exhibit is announcing a new Baby Breck Kit, containing Baby Breck Ointment for use in eliminating and preventing diaper rash; Baby Breck Soap, a mild pure cake soap; and Baby Breck Lavo, a gentle liquid cleanser for bathing baby from head to toe. A plastic dispensing bottle is included.

BREWER & COMPANY
Worcester, Mass.
Booth F-12

Your call will be welcomed at the Brewer display where known products of its Ampul Division as well as the Tablet Division and two of its specialties—GEL-ETS OLEOVITAMIN A 25,000 UNITS AND GEL-ETS TRIASYN B—are on display. Representatives will be glad to answer any questions concerning these products and arrange for samples and literature to be sent to the physician's office.

BROCKMAN MFG. CO.
Bala-Cynwyd, Pa.
Booth F-17

Medically prescribed passive, active assistive, active, or progressive resistive exercises are obtainable with the Brockman Therapeutic Exerciser. It is designed specifically for professional use in physical medicine and rehabilitation. This electronically controlled exerciser offers a selection of exercises to various muscle groups with calibrated control of resistance, speed and range of motion.

BURNS CUBOID COMPANY
Santa Ana, Calif.
Booth C-11

Recognizing the doctor's increasing interest in foot comfort, Burns Cuboid Company are showing a large, lighted, Masonite display completely refinished and designed to emphasize the ideas of weight distribution and balance. A gratifying factor to the firm is the return of about 50% of doctors who purchased Cuboids at previous sessions, either for additional Cuboids or to point them out to other physicians. During A.M.A. sessions a courtesy discount is extended physicians, their wives, and nurses.

BURROUGHS WELLCOME & CO. (U.S.A.) INC.
Tuckahoe, N. Y.
Booth C-24

Among significant products featured here are "Wellcome" brand GLOBIN INSULIN with Zinc "B. W. & Co."—an accepted intermediate acting insulin; "DEXIN" brand High Dextrin Carbohydrate, in which the non-fermentable proportion predominates; and DIGOXIN—a pure, stable, crystalline glycoside which offers predictable digitalization.

CAMEL CIGARETTES
New York, N. Y.
Booth A-1

CAMEL Cigarettes feature color slides of background data from their newest research. After weekly examinations of the throats of hundreds of men and women smoking CAMEL Cigarettes exclusively for thirty days, throat specialists reported "Not one single case of throat irritation due to smoking CAMELS."

CAMERON SURGICAL SPECIALTY CO.
Chicago, Ill.
Booth D-24

Among the interesting items demonstrated at the Cameron exhibit are the new Suction Coagulation Handle and numerous accessories for all phases of Electro-Surgery, Electro-Cauterization, Electro-Coagulation, Desiccation and Fulguration; Cameron Surgical Units; Electro-Diagnostic Lamp and Instrument Outfits; the new stainless steel Boros Flexible Esophagoscope and other Peroral Equipment; Coagulair and Dualite Sigmoidoscopes; Tele-Vaginalite; Mirrorlite and other Headlites; Binocular Loupes; Illuminated Specula, Endoscopes and Retractors.

CARNATION COMPANY
Los Angeles, Calif.
Booth C-19

You will see an attractive display on Carnation Evaporated Milk—"the milk every doctor knows." Some valuable information on the use of this milk for infant feeding, child feeding, and general diet is presented and the method by which Carnation is generously fortified with pure crystalline Vitamin D—400 U.S.P. units per reconstituted quart—is explained. Interesting literature is also available for distribution.

THE CENTRAL PHARMACAL CO.
Seymour, Ind.
Booth B-13

Newest product advancements in triple-sulfa therapy keynote the Central display. Their Trisulfazine line—which provides greater safety and increased effectiveness in the treatment of a wide range of serious infections—merits your attention, as does their Synophylate or Theophyllin-Sodium Glycinate group of products, representing improvements in the field of Theophyllin therapy. A valuable souvenir commemorating the third Clinical Session and honoring the A.M.A. is available to all physicians.

THE CHICAGO DIETETIC SUPPLY HOUSE
Chicago, Ill.
Booth E-21

Management of Special Dietaries may be easier if you become acquainted with the line of Cellu Dietary Foods on exhibit here. These foods are purposefully prepared for inclusion in Low Sodium, Allergy, and Sugar and Starch restricted diets. Cellu Products have served the medical field for 28 years and are constantly being adapted to the changing demands of Dietary Control. Some brand new foods are being featured.

CHILCOTT LABORATORIES
Morris Plains, N. J.
Booth B-4

Simple, reliable prothrombin determination made possible with Thromboplastin-Chilcott is being demonstrated at Booth B-4 of Chilcott Laboratories, Division of The Maltine Company. Advantages of the more stable tablet form of Thromboplastin-Chilcott may be observed in the approved Quick (whole plasma) and Link-Shapiro (whole and dilute plasma) tests. Literature and laboratory instructions are available at the booth.

CHURCH & DWIGHT CO., INC.
New York, N. Y.
Booth C-14

The use of Arm & Hammer and Cow Brand Baking Soda as a dentifrice is emphasized in the Church & Dwight exhibit. Colorful little booklets suggesting its application in cleaning teeth are on display and handy pocket-sized samples especially suitable for traveling may be had at the booth.

CIBA PHARMACEUTICAL PRODUCTS, INC.

Summit, N. J.

Booth D-3

The Ciba exhibit features PYRIBENZAMINE, an established antihistaminic for allergic relief with minimal side effects. Experienced professional service representatives in attendance will gladly discuss Pyribenzamine tablets, elixir, cream, and ointment—the Council accepted forms of Pyribenzamine.

THE COCA-COLA COMPANY

Atlanta, Ga.

Booths D-25, E-26

Once again you are invited to pause at *the Coca-Cola exhibit and enjoy* a refreshing ice cold Coca-Cola—served to Convention visitors through the courtesy and cooperation of Washington Coca-Cola Bottling Works, Inc. and the Coca-Cola Company.

WARREN E COLLINS, INC.

Boston, Mass.

Booth A-12

In booth A-12 Warren E. Collins, Inc. display the latest model Drinker-Collins Respirator equipped with the new Minnesota sloping front; the Collins Respirometer used in the detection and treatment of respiratory function; the Collins Vitalometer; Collins Metabolex, the waterless metabolism tester; and the Collins Oxyflo *Open Top Oxygen* Tent. *Drop in for a* demonstration.

COLWELL PUBLISHING COMPANY

Champaign, Ill.

Booth E-18

Complete medical records, attractively *designed and logically arranged—that's the* keynote of the Colwell line. Patients' histories and accounts are easy to keep; the DAILY LOG for *Physicians* provides the basis for keeping track of the business side of a practice. You will want to examine the Daily Log and case history forms and discuss your needs with experienced representatives.

COOPERATIVE MEDICAL ADVERTISING BUREAU

Chicago, Ill.

Booth F-27

Copies of the 34 state medical publications *comprising* the State Journal Group, are on display. These member journals of the C.M.A.B., representing 42 state medical *associations, follow the A.M.A. high standards* in acceptance of advertising. Prospective advertisers are invited to secure sample copies, rates and other information at the booth. Also offered are "Advertising Service," a booklet outlining services performed by the Bureau for both advertisers and advertising agencies, and the Budget, offering 29 space plans for coverage in the entire group of publications.

DAVOL RUBBER CO.

Providence, R. I.

Booth C-17

The Davol exhibit embodies the latest developments in Surgical Rubber Specialties: a Colostomy Irrigator; a new Ileostomy Appliance; the recently introduced "Hanna" Style Colostomy; an all rubber Bed Pan; *and a* rubber Water-cooled Mattress. Of common interest will be a presentation of Davol's improved "Anti-Colic" Nurser with Control Vent, "Anti-Colic" Nipples and standard hospital and surgical needs.

THE DENVER CHEMICAL MFG. CO., INC.

New York, N. Y.

Booth E-5

Galatest for the instantaneous determination of urine sugar and Acetone Test (Denco) for the detection of acetone in urine are being exhibited. You are cordially invited to witness a demonstration of these "spot tests" for sugar and acetone which offer advantages of accuracy, simplicity, *and economy* in routine urinalysis.

DEPUY MFG. CO.

Warsaw, Ind.

Booth C-13

Latest designs in Fracture Appliances highlight the De Puy exhibit. Sherman *bone plates, Smith-Petersen* nails, Lorenzo Half-Thread hip screws, and other items for internal fixation of bones—all made of S.M.O. Stainless Steel—also merit your attention. *These plates and screws can be* furnished in electro-polish.

DUREX PRODUCTS, INC.

New York, N. Y.

Booth B-2

A most extensive line of Council-Accepted contraceptive devices and preparations are on display for your examination and approval by Durex Products, Inc. Here you may inspect Bow-Bend, Dumas, Duraflex, Mensinga and Durex Coil Spring Diaphragms, four types of diaphragm inserters and, of course, Lactikol Jelly and Lactikol Creme. Unique combination sets for convenient dispensing are being demonstrated.

E & J MFG. CO.

Glendale, Calif.

Booth D-14

Visitors may witness interesting demonstrations of the E & J Automatic Resuscitator and inspect the new E & J Gas Anes*thesia Machines*. Entirely new methods of design and construction are featured in both units. The clinical doll that breathes *is an interesting part of the exhibit.*

EATON LABORATORIES, INC.

Norwich, N. Y.

Booth B-3

[illegible] ton exhibit will [illegible] of discussing [illegible] forms available and latest clinical developments in FURACIN therapy; Tripazine—the Eaton triple [illegible] ontaining no sulfo- [illegible] ninimize crystalluria; [illegible] studies of Lorophyn [illegible] ndicate the effective- [illegible] technic.

EDIN ELECTRONICS CO.

Worcester, Mass.

Booth B-8

A complete line of Electrocardiographs, [illegible] Cardiotachometers, [illegible] and Ink-recording [illegible] *xhibit by the Edin* [illegible] *Many new phases of* medical installation are being demonstrated including the ne [illegible] GRAPH with [illegible] tripping x-ray [illegible] when the heart assumes a certain phase position. Th [illegible] developed in [illegible] house Electri [illegible] and several leading research cardiologists.

ELECTRO-PHYSICAL LABS., INC.

New York, N. Y.

Booth E-3 (W½)

Two important items are on exhibit at the Electro-Physical Laboratories' booth: The model PC-2 CARDIOTRON, pioneer direct-writing Electrocardiograph; and the Cardioscan, a new application of electronics, resulting in a visual sampling cathode-ray electrocardioscope.

ELECTRONIC SURGICAL EQUIPMENT CO., INC.

Philadelphia, Pa.

Booth B-16

Exhibited here is the RADIOSURG SCALPEL Operating Unit (fully rectified construction), a portable radio frequency *surgical apparatus* of advanced engineering design. This precsion instrument permits the use of varied electronic surgical methods to meet *the minor surgical needs* of the genera [illegible] ist, gynecologist, or [illegible] according to exact [illegible] supplies ideal current characteristics.

FABRIKATORS, INC.

Boston, Mass.

Booth E-6

For complete information on this firm's "CHESTPIRATOR" Hospital Model Portable Respirator visit booth E-6. Meet the representatives who can answer questions about this important product. The unit has a great many features of the large rigid type respirators.

FANCEE FREE MFG. CO.

St. Louis, Mo.

Booth D-19

Your "expectant mother" patients will be happy to know about the comfortable elastic garter belt for use during and after pregnancy. Fitting around the waist in back and below the abdomen in front, the FANCEE FREE thus eliminates any abdominal pressure. It is available in small, medium, and large sizes or in an adjustable style that fits any of these sizes. Be sure to see it.

GASTRO-PHOTOR LABS. CORP.

New York, N. Y.

Booth E-8 (W½)

Gastroenterologists, surgeons, general practitioners are especially invited to visit booth E-8 where a camera for photographing the interior of the stomach is properly displayed and demonstrated. This camera has received favorable comments from eminent physicians, Army and Navy Departments, and a number of European and South American countries. The instrument makes possible the diagnosing of *ulcers hidden within rugal folds or in* locations inaccessible to x-ray observations. Free sample photographs are available.

GRADWOHL LABORATORIES

St. Louis, Mo.

Booth B-23

To give the medical profession an idea of their activities, Gradwohl Laboratories are featuring: their production of reliable *laboratory reagents; training of laboratory* and x-ray technicians; publication of a monthly journal, the "Laboratory Digest," and of a textbook (in three volumes now in the fourth edition), "Clinical Laboratory Methods and Diagnosis." Trained attendants will answer all questions relating to these activities and send literature to all who *register at the booth.*

THE GRAPETTE COMPANY, INC.

Camden, Ark.

Booth F-13

Exhibiting for the first time at an A.M.A. meeting, the Grapette Company, Inc., confines its activities to serving its chief product—GRAPETTE. Representatives will *welcome your visit.*

GRAY MFG. CO.

Hartford, Conn.

Booth F-25

Audograph Sales Company, in booth F-25, is demonstrating the amazing ease with which case histories may be recorded and *transcribed, as well as exclusive features* of the Gray Audograph electronic soundwriter. The compactness of the filing space requirements for Audograph paper-thin record discs is illustrated by a showing of 100 discs in a one-inch file space as against the space occupied by the comparable 2800 typewritten pages.

GRUNE & STRATTON, INC.

New York, N. Y.

Booth D-23

Notable among the many G & S books *shown at the exhibit are the following* 1949 publications: PROGRESS IN CLINICAL ENDOCRINOLOGY, edited by Samuel Soskin *with ninety-two contributors; CARDIO*VASCULAR DISEASE, by Louis H. *Sigler*; REGIONAL ILEITIS, by Burrill B. Crohn; ANGINA [illegible] INFARCT [illegible] ACUTE [illegible] by A. Ha [illegible] of ELEM [illegible] by Jacob [illegible] Edition o [illegible] by Clem [illegible] *HERNIA, by Alfred H. Jason*; EARLY CARCINOMA OF THE UTERINE CERVIX, by Hansjakob Wespi.

HANOVIA CHEMICAL & MFG. CO.

Newark, N. J.

Booth D-20

A complete line of ultraviolet quartz lamps for orificial and general *body irradi*ation is on display as well as Hanovia Sollux Radiant Heat Lamps, jacketed type ultraviolet Germicidal Lamps for the destruction of air-borne bacteria, and black light for dia [illegible] Competent and [illegible] are on hand to [illegible] come your visit.

THE HARROWER LABORATORY, INC.

Glendale, Calif.

Booth C-4

Mucotin, the mucin antacid, is presented at the Harrower technical exhibit. Gastroscopic illustrations show the coating action of Mucotin on a large gastric ulcer. A case history report of a patient with a gastric ulcer and the response to treatment is demonstrated with gastroscopic pictures. Gastric acidity control studies with various antacids are graphically presented. Literature and samples are available at the exhibit.

H. J. HEINZ CO.

Pittsburgh, Pa.

Booth C-18

H. J. Heinz Company display Strained and Junior Foods as well as a wide variety of nutrition material. Doctors will find the products of interest not only for feeding infants and other small children, but also in gastro-intestinal cases, preoperative and postoperative disturbances, oral troubles, geriatrics, and a number of conditions where Strained and Junior Foods are required.

HOLLAND-RANTOS COMPANY, INC.

New York, N. Y.

Booth E-11

So that patients may determine individual preference, tubes of both Koromex Jelly and the less-lubricating Koromex Cream are provided at no extra cost in the KOROMEX DIAPHRAGM COMBINATION featured in the Holland-Rantos exhibit of Koromex [illegible] lties. On display al[illegible]. REFILLABLE UNIT. No added charge is made for the attractive ivory-colored plastic box that affords a dustproof protective container for the Koromex Diaphragm, measured-dose applicator and two tubes of Koromex Jelly (or Koromex Cream as desired).

HYGEIA, THE HEALTH MAGAZINE

Chicago, Ill.

Booth F-29

Ask the booth attendant here to mail one or more free copies of HYGEIA to your home or office reception room. See the pictorial representation of a modern magazine's editorial contributors, processes of editing, methods used for accepting advertising, division of readership groups, etc. Featured are sequence-lighted color transparent photographs showing how HYGEIA "speaks" to parents, their families, and members of various professions.

IMPORTED SPECIALTIES, INC.

New York, N. Y.

Booth F-7

The new imported Buhl Pocket-Size Spirometer, which weighs less than one pound and fits into a doctor's kit, is being shown by Imported Specialties, Inc. Used by many hospitals, doctors, and unversities because of its handiness and simplicity to operate, it is truly a revolutionary improvement over old type Spirometers.

INTERNATIONAL COLLEGE OF SURGEONS

Chicago, Ill.

Booth F-10

The exhibit of the United States Chapter, International College of Surgeons, presents graphically detailed information concerning the activities of the organization in all its phases, the principles upon which it was founded and functions, the location of its component chapters throughout the world, its general and educational program, and the extent of its activities.

IODINE EDUCATIONAL BUREAU, INC.

New York, N. Y.

Booth D-10

The Iodine Educational Bureau exhibit calls attention to the place of iodine in surgery, medicine and nutrition. Samples of U. S. P. and N. F. preparations and Council-Accepted preparations containing iodine are displayed. Representatives are on hand to offer the Bureau's services without cost or obligation.

HOWARD JOHNSON ELECTROSTATICS & ELECTRONICS INC.

Pound, Va.

Booth E-12

Of particular interest is the ELECTROMAGNETIC HYPODERMIC—and electrically-operated syringe which promises painless injections! The device also features a heating coil for sterilizing the solid needle between injections and disposable contact knobs which make sterilization between injections unnecessary. Be sure to see it demonstrated at the booth.

JONES METABOLISM EQUIPMENT CO.

Chicago, Ill.

Booth A-3

The Jones Metabolism exhibit offers a splendid opportunity to become better acquainted with the various Jones Metabolism units, both standard and DeLuxe models. A staff of trained technical advisers demonstrate the equipment and explain any problems concerned with metabolism testing.

KELLOGG COMPANY

Battle Creek, Mich.

Booth D-21

Visitors to the Clinical Session who are interested in diet will want to see the set of special diet pads covering Bland, High Residue, Low Caloric, High Caloric, Salt Restricted, and Low Fat diets on display at the Kellogg booth. A Diet Manual giving suggestions for additional restricted diets is also available. These diets have been carefuly outlined following the recommendations of best known authorities on diet in disease.

LANTEEN MEDICAL LABORATORIES, INC.

Evanston, Ill.

Booth C-22

Physicians interested in AN IMPROVED METHOD OF CONTRACEPTION are invited to visit the Lanteen exhibit. This authoritative brochure features an improvement [illegible] d Jelly method of [illegible] by leading authori[illegible] nost effective means of preventing conception. The brochure will be distributed to physicians by Lan[illegible] will be on hand [illegible] of the Lanteen [illegible].

LEA & FEBIGER

Philadelphia, Pa.

Booth A-11

The Lea & Febiger exhibit will be of particular interest because of its display of such outstanding new books and new editions as Palmer, STOMACH DISEASE AS DIAGNOSED BY GASTROSCOPY; Pratt, SURGICAL MANAGEMENT OF VASCULAR DISEASES; Singer, DIFFERENTIAL DIAGNOSIS OF CHEST DISEASES; Hartman and Brownell, THE ADRENAL GLAND; Quiring, COLLATERAL CIRCULATION; Comroe, ARTHRITIS AND ALLIED CONDITIONS; Bridges, DIETETICS FOR THE CLINICIAN; Lichtman, DISEASES OF THE LIVER, GALLBLADDER AND BILE DUCTS; Kovacs, ELECTROTHERAPY AND LIGHT THERAPY; Goldberger, UNIPOLAR LEAD ELECTROCARDIOGRAPHY; Burch and Winsor, PRIMER OF ELECTROCARDIOGRAPHY; Pohle, CLINICAL ROENTGEN THERAPY; and many others.

LEDERLE LABORATORIES DIVISION

New York, N. Y.

Booth A-15

Studies on Aureomycin are portrayed at the Lederle exhibit. Of special interest is a presentation of charts and posters showing the isolation of Aureomycin—a versatile antibiotic—together with reports on the pharmacology, bacteriologic studies and other laboratory studies. Photographs showing the nature of the antibiotic as well as charts of clinical case reports are included.

THE LIEBEL-FLARSHEIM CO.

Cincinnati, Ohio

Booth E-7

Latest diathermy and Bovie electrosurgical apparatus are available for your examination and demonstration at the Liebel-Flarsheim booth. This year's exhibit features the "Office Bovie," an electrosurgical unit specially designed for office use. Capable representatives are on hand at all times and hope you will stop by to become acquainted.

ELI LILLY AND COMPANY

Indianapolis, Ind.

Booths D-9, 11

Your Lilly medical service representative cordially invites you to visit the exhibit of Eli Lilly and Company. The display features a demonstration of the rapid slide flocculation test for the sero-diagnosis of syphilis with Cardiolipin. Tests made with Cardiolipin have been found to be more easily performed than earlier ones, and their sensitivity is as good or better than others using a lipoid antigen. False positive reactions, although not completely avoided by the Cardiolipin test, are materially reduced, especially in malaria.

J. B. LIPPINCOTT COMPANY

Philadelphia, Pa.

Booth C-2

Look to Lippincott for timely, practical, and authoritative information—to selected professional books in all fields of medicine, surgery, nursing, and pharmacy. Here is a continual indication of current medical trends and needs which serves as the basis for new and revised clinical volumes and textbooks. Here are reports of the outstanding and significant work being done in general practice as well as the specialties by men making very real contributions to medical progress.

THE LOFSTRAND COMPANY

Rockville, Md.

Booth E-13

The Lofstrand Company presents the latest research development in prefabricated leg brace parts. These parts are quickly and easily assembled into various types of lightweight aluminum leg braces. Other features include: proper physiologi[illegible] i-pivot knee locks, [illegible] excellent wear[illegible] permanent alumilite finish. The newly expanded line of Lofstrand Featherweight Crutches are also presented.

P. LORILLARD CO., INC.

New York, N. Y.

Booth F-15

The exhibit by the makers of Old Gold Cigarettes is symbolic of the company's manufacturing policy which has been to retain all that is best in traditional methods and combine these with the best that Twentieth Century science affords. The booth is manufactured of the newest of plastics, plywood, and illuminated with indirect fluorescent light. The central feature is a lighted map showing the extent of Lorillard's manufacturing and sales facilities.

LUZIER'S, INC.

Kansas City, Mo.

Booth B-21

This complete display of Luzier's Fine Cosmetics and Perfumes will be of special interest to dermatologists and allergists as well as to the ladies who visit the Clinical Session. Officials of Luzier's, Inc. will be on hand to explain Luzier's Service in the Field of Allergy.

M & R DIETETIC LABS., INC.

Columbus, Ohio

Booths D-5, 7

Similac Division, M & R Dietetic Laboratories, Inc. will present an interesting display of Similac, a food for infants. Representatives look forward to your visit and the opportunity to discuss the merits and suggested application of Similac for both the normal and special feeding case.

THE S. E. MASSENGILL CO.

Bristol, Tenn.

Booth C-16

The S. E. Massengill Company calls attention to its showing of the clinical advantages of dual and triple sulfonamide combinations. Emphasizing reduced renal hazard due to lessened crystalluria, decreased incidence of allergic manifestations, and greater therapeutic efficacy due to lessened acetylation, the exhibit offers excellent opportunity for discussion of sulfonamide therapy. Medical Service Representatives of the Company will be pleased to register you.

F. MATTERN MFG. CO.

Chicago, Ill.

Booth D-4

New designs, new developments, and new possibilities for better professional service through their improved x-ray equipment are the points of interest in the Mattern exhibit. One of the units on display is the much talked of PUSH BUTTON CONTROL

100MA UNIT which, say the manufacturers, leads the x-ray field not only in style and quality, but also in being reasonably priced. Courteous, experienced personnel are at your service to answer any questions.

MEAD JOHNSON & COMPANY

Evansville, Ind.

Booth A-7

Dextri-Maltose, Oleum Percomorphum, Pablum, Pabena, Olac and other Mead Products used in Infant Nutrition will merit your thoughtful attention at the Mead Johnson exhibit. *Protenum, a new high protein product,* is also displayed as well as Lonalac, for low sodium diets. Representatives at the exhibit will be glad to *discuss with you the new improvements* of Amigen and Amisets.

THE MEDICAL BUREAU

Chicago, Ill.

Booth A-5

In Booth A-5, Burneice Larson offers the facilities of The Medical Bureau, an organization serving as counselor in problems of *medical personnel to medical schools and* universities, public health organizations, hospitals and institutions, group clinics, physicians in private practice and industry. The records of Diplomates of the American Boards qualified to head their departments, younger physicians interested in obtaining training also, administrators, executive and supervising nurses, scientists, labora- [illegible] technicians, social [illegible] are available to [illegible] completion or [illegible] taffs.

MEDICAL CASE HISTORY BUREAU

New York, N. Y.

Booth E-2

A handy, compact method for keeping complete case histories is being shown by the INFO-DEX RECORD SYSTEM. These history charts are so arranged on folders that subsequent cards are attached by means of a cotter pin which holds the cards together in [illegible] cards can be lost [illegible] colored cards are [illegible] types of data such as laboratory, x-ray findings, etc. Included in this system is *an automatic diagnostic cross-indexing.* All cases of the same disease can be identified instantly. Very fine steel filing cabinets in which to house these history *charts and bookkeeping records are also* shown for your convenience.

MEDICAL FILM GUILD, LTD.

New York, N. Y.

Booth A-22

"Medical Films That Teach" presents a refresher course in fundamental medical problems. Each film subject is produced *in the manner of a textbook, profusely* illustrated, offering information comparable to that found in postgraduate courses as presented at our leading medical schools. These films are available at no charge to intern groups, hospital staff conferences, limited nurses' groups, and to general medical meetings. This includes projection service at no charge and is arranged through grants for postgraduate instruction.

THE MENGEL COMPANY

Louisville, Ky.

Booth C-5

The Me [illegible] made by the manufactu [illegible] Furniture, off [illegible] dvantages of a [illegible] Made of sturdy [illegible] tween mattress and springs, the new Mengel Adjustabed permits anyone to rest in relaxing positions that can be conveniently altered.

MERCK & CO., INC.

Rahway, N. J.

Booth D-15

Cobione ([illegible] Vitamin B-12 Merck), Strep [illegible] Complex, and [illegible] ad to supply infor- [illegible] on these and other Merck products.

WM. S. MERRELL CO.

Cincinnati, Ohio

Booth F-16

Merrell features Diothane Ointment, an improved topical anesthetic of prolonged effectiveness and established clinical safety —together with its companion product, *Diothane Cream, designed for use where* a vanishing [illegible] caprym, a [illegible] minic, is [illegible] sentatives [illegible]

C. V. MOSBY COMPANY

St. Louis, Mo.

Booth A-17

Here you will find a wealth of new and [illegible]

NATIONAL DAIRY COUNCIL

Chicago, Ill.

Booth D-18

"INFANT FEEDING," the exhibit prepared by the National Diary Council, [illegible] their [illegible] "OUR [illegible] nned [illegible] is a [illegible] y-to- [illegible] *iding* [illegible] cular interest to doctors will be available at the exhibit.

NEPERA CHEMICAL CO., INC.

Yonkers, N. Y.

Booth E-19

The display features illuminated color [illegible] pathology of in- [illegible] kidney. Mandel- [illegible] nine mandelate) [illegible] Indicated in [illegible] amine is effec- [illegible] range, especially [illegible] administered.

ORGANON INC.

Orange, N. J.

Booth A-6

Heparin—the body's natural anticoagu*lant—is the subject about which the* Organon exhibit is centered. Subcutaneous injection and other new methods of administering Liquaemin—the Organon brand of hepar [illegible] Newer concepts of the [illegible] coagulation, showing [illegible] are illustrated together with a machine actually demonstrating the anticoagulant action of heparin on the blood. Doca Acetate (desoxycorticosterone acetate), another Council-Accepted Organon product, is also featured.

PARKE, DAVIS & CO.

Detroit, Mich.

Booths E-1, F-2

Members of the Parke, Davis & Company Medical Service Staff are in attendance at *the exhibit for consultation and general* [illegible] Council- [illegible] atured [illegible] and [illegible] led to [illegible] e that your inquiries and expressions of interest will be given appropriate attention.

THE E. L. PATCH COMPANY

Boston, Mass.

Booths B-17, B-19

A very interesting demonstration here dramatizes the quick disintegration and rapid anti-acid action of Alzinox, the Patch brand of Dihydroxy Aluminum Aminoacetate. This combination of the amino acid glyc [illegible] special value in [illegible] be- cause it p [illegible] nged action w [illegible] may also lear [illegible] the Patch brand of Theophylline Sodium Glycinate, which has been found to permit high dosage levels of theophylline with minimum gastric irritation. Patch representatives will welcome you and tell you about these new products which in addition to Kondremul constitute the Patch Exhibit.

PET MILK COMPANY

St. Louis, Mo.

Booth C-9

A miniature working model of an evaporated milk plant is exhibited by the Pet Milk Company. This exhibit offers an opportunity to obtain information about *the production of Pet Milk, its use in infant* feeding, and the time-saving Pet Milk services available to physicians. Miniature Pet Milk cans are given to physicians who visit the Pet Milk Booth.

PETRA MFG. CO.

Chicago, Ill.

Booth B-14

In addition to the regular complete line of professional garments and covers, Petra Manufacturing Company, manufacturers of Krestex garments, are this year showing the new "doctor's Bootees," of special interest to orthopedic specialists and urologists. These bootees slip right over regular shoes, protecting both shoes and trouser legs completely from fluids, plaster of *paris, or any dirt that might otherwise* ruin clothing. Fluoroscopic screen covers in two sizes are also a new, featured item.

PHILIP MORRIS & COMPANY

New York City, N. Y.

Booths A-21, B-9

Phili [illegible] nstrate the m [illegible] d that Philip [illegible] iethylene gly [illegible] agent, are le [illegible] rettes. Their [illegible] to discuss [illegible] l and problems on the physiological effects of smoking.

W. F. PRIOR CO.

Hagerstown, Md.

Booth E-25

W. F. Prior Company show the latest revisions of their loose-leaf reference *books,* Tice's *Medicine,* Lewis-Walters *Surge* [illegible] *Pediatrics,* and [illegible] *Obstetrics.* Many [illegible] current and interesting subjects will also be available for your examination. Members of the Prior Threefold Service are entitled to copies of any of these articles—a practical solution to the problem of keeping up to *date.*

THE PROMETHEUS ELECTRIC CORP.

New York, N. Y.

Booth E-16

Prometheus Electric Corporation demonstrates its entire line of autoclaves, sterilizers and food conveyors. These are manufactured in monel and stainless steel and incorporate many improvements in standard designs.

THE PYRAMID RUBBER CO.

Ravenna, Ohio

Booth E-20

How air in the bottle *prevents* air in the *infant's stomach (cause of nursing colic)* is graphically demonstrated with Evenflo nursers at booth E-20. A robot-like device simulates a baby nursing to show the *action of the Evenflo Patented Twin-Valve* Nipple under actual nursing conditions. Also on display are Evenflo Brushless Baby Bottle Cleanser, the new Evenflo Deluxe Nurser with pyrex brand glass, and the new Evenflo Electric Baby Bottle Warmer.

RALSTON PURINA COMPANY

St. Louis, Mo.

Booth D-26

A beautiful new booth will attract your attention here. Colorful translights showing the composition of Instant Ralston and Hot Ralston cereals graphically portray their nutritive value and importance in the diet. Dietary uses for Ry-Krisp and Shredded Ralston are also presented in color. You may examine and register for a variety of valuable diets that may save you much consultation time—three nutritionally adequate low caloric diets, five allergy diets, and a series of four feeding direction forms for infants and young children.

RAYTHEON MFG. COMPANY

Waltham, Mass.

Booth E-27

The Microtherm, Raytheon's up-to-the-minute microwave diathermy, is featured. Completely post-war, the Microtherm *offers* an efficient, convenient *and safe form of* deep heating apparatus. Significant features are: high absorption, penetrating energy for deep heating, effective production of active hyperemia. Representatives will be pleased to greet you.

REXALL DRUG CO.

Los Angeles, Calif.

Booths F-3, F-5

The Petechiometer, a clinical instrument for the determination of increased capillary fragility (increased permeability) by the application of suction over the biceps for one minute, will interest you here. It can evaluate the efficacy of therapeutic measures employing vitamin K or Ascorbic Acid when administered in the treatment of petechial hemorrhage, frequently associated with nutritional deficiencies, Dicumarol therapy, or found as a syndrome complicating many illnesses.

SANBORN COMPANY

Cambridge, Mass.

Booth E-24

An exhibit of interest to clinicians, specialists, and research men alike—in the *fields of cardiology*
will be found at th
display are working
diagnostic instruments as the Sanborn Metabulator, the "all-enclosed" metabolism tester; and the Sanborn Viso-Cardiette, a leader among direct-writing electrocardiographs. These are supplemented by material on more specialized, research-type equipment, including the Viso-Cardiette with multi-channel biophysical research recorder; the Electromanometer, oustandingly useful for a wide variety of venous, arterial, intracardiac, and other "pressure" recordings; and other diagnostic instruments of still more recent development.

SANDOZ PHARMACEUTICALS

New York, N. Y.

Booth C-20

Physicians interested in migraine should visit this exhibit featuring an animated presentation of the current theory of the mechanism of migraine headache and relief following administration of Gynergen (ergotamine tartrate). Other preparations displayed include Digilanid (crystalline glycosides of Digitalis lanata), Sandoptal, Scillaren, and Calglucon (the original calcium gluconate).

W. B SAUNDERS COMPANY

Philadelphia, Pa.

Booth A-9

Doctors attending the Clinical Session are especially invited to look over the complete line of Sa
INTEGRA
Bockus'
ATLAS OF BLOOD AND BONE MARROW, Boerner & Sunderman's NORMAL VALUES, Friedberg's DISEASES OF THE HEART, Crile's PRACTICAL ASPECTS OF THYROID DISEASE, Levine & Harvey's CLINICAL AUSCULTATION OF THE HEART, Fine's CARE OF THE SURGICAL PATIENT, Boies' OTOLARYNGOLOGY, Boyd's MALARIOLOGY, and many other new books and new editions.

SEALY, INC.

Chicago, Ill.

Booth D-8

Such keen interest was shown by so many of the medical profession at the Atlantic City convention that the 27 factories of Sealy, Incorporated are again displaying the nationally accepted Sealy Orthopedic Firm-o-Rest mattress and box spring at the Clinical Session. Accepted for advertising in the *Journal of the American Medical Association*, Sealy's Orthopedic gives natural, non-sag suport to the patient's back. It is correctly firm yet completely comfortable and is the result of scientifically conducted research by technically trained men.

SEARER RUBBER COMPANY

Akron, Ohio

Booth F-20

. One good reason for visiting this exhibit is an opportunity to become better acquainted with the Steadifeed Nurser—the nipple that "b-r-e-a-t-h-e-s." Steadifeed works like a tiny bellows—"breathes" in air as baby withdraws food, until the bottle is empty. Other advantages include: tight fit against bottle and cap; steady air feed to provide free pasage of air; adaptability, etc.

G. D. SEARLE & CO.

Chicago, Ill.

Booths B-5, B-7

At the Searle booths, a large number of anatomic and pathologic subjects are exhibited in colored translites and colored slides. Featured is the new product Dramamine, used in all types of motion sickness. Other featured products of Searle Research include Aminophyllin, Diodoquin, Gold Sodium Thiosulfate, Iodochlorol, and Metamucil.

SHARP & DOHME, INC.

Philadelphia, Pa.

Booth B-10

Stable, portable 'Lyovac' Normal Human Plasma irradiated to destroy not only bacteria but also the viral contaminants that might cause homologous serum hepatitis merits your attention. Unusual Specialties including the popular sulfonamide drugs also will be of major interest. Courteous attendants will be pleased to serve you.

SHAY MEDICAL AGENCY

Chicago, Ill.

Booth B-15

Shay Medical Agency, a personnel placement service, has representatives in attendance, who specialize in the selection of candidates for positions in all branches of the Medical and Dental profession. You are invited to call upon them and discuss your own requirements in strict confidence. If you are an employer seeking help or an applicant seeking a position they can assist you. Whether your needs are immediate or for the future, stop by and talk it over.

THE SIKES CO., INC.

Buffalo, N. Y.

Booth B-6

Posture seating for office and secretarial use, together with reception room furniture, highlight the Sikes exhibit. Built around a revolving display, it gives prominence to the Sikes Executive Posture Chair and plainly shows its unusual features. Also shown are a secretarial chair with the same type of posture mechanism and a grouping of solid birch reception room furniture in the famous Sikes Butterscotch finish.

SMITH, KLINE & FRENCH LABS.

Philadelphia, Pa.

Booth B-18

'Benzedrine' Sulfate Tablets, N.N.R. is the focal point of attention in the S. K. F. exhibit. 'Benzedrine' Sulfate (racemic amphetamine sulfate, S. K. F.) can, in the majority of cases, be depended upon to break the stranglehold of mental depression. It is also highly effective in controlling appetite in the treatment of overweight —without the use (and risk) of thyroid. Valuable, too, in the treatment of narcolepsy and postencephalitic parkinsonism and as an adjunct in the management of alcoholism.

SPECIAL FORMULA CORP.

New York, N. Y.

Booth E-22

LYGENES VAGINAL SUPPOSITORIES, modern contraception in its simplest form is the principal feature of the Special Formula Corporation exhibit. The latest clinical and statistical evidence is available for examination and discussion. LYGEL VAGINAL JELLY is also exhibited, and complimentary samples of both products are available to physicians upon request.

SPENCER, INC.

New Haven, Conn.

Booth E-4 (W½)

On display here are Spencer Supports for men, women, and children—individually designed for each patient to meet the prescribed medical indications. *Of special* interest are Spencer's new SPINAL SUPPORTS FOR CHILDREN, breast supports for "problem breasts" (including mastectomy), and the SPENCER ABDOMINAL SPRING PAD (patented). See also Spencer's Blood Pressure Sleeve—fits any size arm and provides quick accurate readings.

R. J. STRASENBURGH CO.

Rochester, N. Y.

Booth D-6

For Monilial vulvovaginitis, Naprylate Suppositories Encapsulated—a new treatment form embodying the Sodium and Zinc Salts of Caprylic Acid—is featured. Other developments in the management of superficial fungus infections are presented in the forms of Naprylate (Brand of Caprylic Compound) Ointment, Naprylate (Brand of Caprylic Compound) Powder, and Sodium Caprylate Solution 20%.

STRONG, COBB & CO., INC.

Cleveland, Ohio

Booth F-4 (W½)

Automatic Injection of repository Penicillin in Oil with Aluminum Monostearate is now available in the DISPOSABLE AMPIN, A. M. A. Council Accepted. Presterilized and ready for immediate use at all times, the automatic Ampin injection of 1 cc. of Crystalline Procaine Penicillin G, 300,000 units per cc., in Peanut Oil with Aluminum Monostearate 2% is completed in less than one minute. See the first automatic injection of repository Procaine Penicilin G demonstrated and try Ampins for yourself.

SWIFT & COMPANY

Chicago, Ill.

Booth A-18

The original *all-meat* baby foods, Swift's Meats for Babies and Juniors, will catch your interest here. These high-protein, body building foods available in six varieties—Beef, Lamb, Veal, Pork, Heart, and Liver—are also widely used for adult special diets. You are cordially invited to discuss with the Swift representatives the clinical research being conducted on Strained and Diced Meats.

TAMPAX INCORPORATED

New York, N. Y.

Booth C-15

TAMPAX Incorporated presents, through colored photographic transparencies, a series of anatomical models sculptured by A. Belskie under the supervision of Robert Latou Dickinson, M.D. Also presented in colored transparencies are two anatomical charts, one showing "Female Pelvic Organs" and the other "Female Reproductive Organs," both of which were actually executed by Dr. Dickinson. Colored prints of these charts are available at the TAMPAX Booth.

TAYLOR INSTRUMENT COMPANIES

Rochester, N. Y.

Booth C-8

The Taylor Instrument Companies feature the exceptional Tycos Aneroid and Tycos Mercurial ten-year triple guarantees. The long service and dependable accuracy of the Tycos Aneroid is being demonstrated by an automatic inflation apparatus which has already inflated ten stock aneroid manometers over 173,357 times (the equivalent of 20 times a day for 23 years). Panels featuring the convenient ease-of-using Tycos models complete their presentation.

U. S. VITAMIN CORP.

New York, N. Y.

Booth A-14

Oil-in-water display demonstrates water solutions of oil-soluble vitamins, as exemplified by Aquasol Vitamin A Drops—first and only aqueous vitamin A preparation accepted by the Council on Pharmacy and Chemistry of the A. M. A. Latest literature describing more rapid absorption of aqueous vitamin A as compared with vitamin A oil solutions and clinical uses of water-soluble A solution are offered.

UNIVERSAL PRODUCTS CORP.

Norristown, Pa.

Booth C-26

You've often wished to have a light at the end of your finger. The new "Surgeons Fingalyte" shown here is just that. Bulb on finger tip, it penetrates into all cavities, gives perfect cold transillumination, and saves the physician's time. Other features include a headlight, weighing only two ounces, contained in a small case with constant sterilizing vapor; and the Surgeons "X-L-Lyte," with a record of 60,000 in use.

(Continued on Advertising page 68)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
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SATURDAY, NOVEMBER 5, 1949

THE WASHINGTON CLINICAL SESSION

In this issue of THE JOURNAL is the program for the Clinical Session of the American Medical Association to be held in Washington, D. C., Dec. 6-9, 1949. This Session formerly was known as the Interim Session. It permits a meeting of the House of Delegates and the provision of graduate medical education for general practitioners of the area in which the meeting is held. However, this interim meeting has become so popular that many physicians attend from other areas.

The clinical part of the Clinical Session will provide a graduate education program replete with topics of broad appeal to practitioners. The subjects that will be discussed are on pages 704 through 713.

The meetings of the House of Delegates become increasingly important and the Reports of Officers to the House indicate the many activities of the Association and the problems that now face the medical profession. In line with the departure introduced at the 1948 St. Louis meeting, these reports will be the annual reports for the Bureaus and Councils of the Association. Formerly such reports were presented at the Annual Session. This new procedure lessens the demand on the time of the House of Delegates at the annual meeting. The General Practitioner's Award will be made at the close of the meeting of the House of Delegates on December 6. It will be followed by a social hour.

The Scientific and Technical Exhibits again will provide an interesting and informative part of the meeting. Scientific developments that have occurred since the last meeting of the Association and subjects that currently are of outstanding importance will be emphasized. The effectiveness of television as a teaching aid will be shown by color and black and white television demonstrations. Descriptions of the Scientific and Technical Exhibits start on pages 714 and 720, respectively. All exhibits and clinical presentations and panels will be held at the National Guard Armory.

Other activities during and immediately preceding the Clinical Session will include the Grass Roots Conference and an evening of entertainment. Attendance at the latter is limited to physicians and their families who are registered at the meeting.

Those who wish to attend the Washington Clinical Session should immediately request hotel reservations. These may be obtained by writing to the Chairman of the Subcommittee on Hotels, American Medical Association Hotel Reservation Bureau, Star Building, Washington 4, D. C.

CALCIFEROL IN LUPUS VULGARIS

The first important advance in the therapy of lupus vulgaris was the introduction by Finsen in 1897 of heliotherapy and of local treatment with concentrated ultraviolet rays. Emery, in 1849, treated patients with lupus vulgaris by administration of enormous doses of cod liver oil (1,000 cc. daily). He reported cure of 74 patients. The method never became popular and soon passed into oblivion. The work of Mellanby (1919), and of MacCollum, Steenbock, Windaus and other biochemists resulted in the isolation from cod liver oil of vitamin D and in the preparation of vitamin D_2, in 1931, by exposure of ergosterol to ultraviolet rays, which resulted in the isolation of crystalline, pure calciferol.

Charpy,[1] of Dijon, began in 1941 to treat patients with lupus vulgaris with massive doses of calciferol. He administered 15 mg. in a single dose three times weekly for the first week, twice weekly for the next three weeks and once weekly for several months. (One milligram equals 40,000 units.) He found the solution of the vitamin in alcohol more effective than the oily extract. He is emphatic about the need for a diet containing 1½ pints (710 cc.) of milk daily, plenty of meat, fruits and vegetables; salt intake should be much reduced, being omitted completely on three days a week. He believes that the healing process is not dependent on calcification, since there is no increase in the serum calcium levels during the course of treatment nor are there calcium deposits to be found in the healed lesions. Charpy in 1946 reported cure in 75 to 100 per cent of cases. Best results were obtained with almost toxic doses. The patient may experience anorexia, vomiting, depression, pallor, thirst and polyuria. These symptoms, however, disappear when treatment is stopped. To be effective the calciferol therapy must be combined with hygienic and alimentary regimens for tuberculosis in general.

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[1] Charpy, M. J.: Le traitement des tuberculoses cutanées par la vitamine D_2 à hautes doses, Ann. de dermat. et syph. (series 8) **9:** 310-346 (May-June) 1946.

Referendum of French dermatologists in 1946 supported Charpy's thesis as to the efficiency of calciferol in the treatment of cutaneous tuberculosis, the consensus being that cure can be obtained in 70 to 100 per cent of cases. A dissenting opinion was voiced by Meyer, whose results with this therapy paralleled those of Feeny in England. Feeny[2] treated 150 patients with lupus vulgaris with 100,000 to 150,000 units of calciferol daily. He stated the belief that the ultimate percentage of success with calciferol therapy would be much the same as with Finsen therapy except that calciferol therapy accomplishes the same results in one-half or one-third the time necessary for the Finsen therapy. Dowling,[3] in England, administered 150,000 units daily, the total dose amounting to 9,500,000 to 62,500,000 units in adults and 4,500,000 to 33,500,000 units in children. Although his results were not as striking as those of Charpy, he considered them satisfactory. Lomholt,[4] of Denmark, stated that treatment with the Finsen lamp as used at the Finsen Institute at Copenhagen, cures about 80 per cent of patients with lupus; the remaining 20 per cent are improved. He treated 130 patients, most of whom had had the disease more than thirty years, with vitamin D in large doses with excellent results.

The mode of action of calciferol in cutaneous tuberculosis has not been elucidated. Michelson,[5] in a recent review, discusses three hypotheses: the hypercalcemia, the direct effect on the bacilli and the improved metabolism. Steenken and Baldwin did not find in vitro evidence of a bactericidal effect on cultures of tubercle bacilli. Charpy believes that the modus operandi of calciferol in cutaneous tuberculosis is probably the same as that of the Finsen lamp. Vitamin D is produced and found in the skin. Ultraviolet irradiation is important in the production of vitamin D. Enrichment of the skin with vitamin D by feeding calciferol produces the same reaction as does treatment with Finsen's lamp in local areas. Michelson feels that the clinical cure of lupus vulgaris with calciferol is a certainty. The anatomic cure is still doubtful. Combined treatment with Finsen's lamp, calciferol and streptomycin may produce even better results. However, calciferol appears to be useful for the treatment of cutaneous and nodular tuberculosis and particularly for the treatment of lupus vulgaris.

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[2] Feeny, P. J.; Sandiland, E. L., and Franklin, L. M.: Calciferol in Tuberculosis: Review of One Hundred and Fifty Cases of Lupus Vulgaris, Lancet 1: 438-443 (April 5) 1947.

[3] Dowling, G. B.: Vitamin D in Cutaneous Tuberculosis, in Scientific Discussions, Lancet 2: 398-399 (Sept. 13) 1947.

[4] Lomholt, S.: Vitamin D in Cutaneous Tuberculosis, in Scientific Discussions, Lancet 2: 398-399 (Sept. 13) 1947.

[5] Michelson, H. E.: Calciferol in the Treatment of Cutaneous Tuberculosis, Arch. Dermat. & Syph. 58: 680-695 (Dec.) 1948.

Current Comment

FIRE PROTECTION IN HOSPITALS

Fires are said to occur in hospitals at the rate of about 1,000 each year. In such circumstances, the safety of patients is of primary importance. The Factory Insurance Association, a nationwide insurance service organization, offers a plan for safeguarding hospitals against calamities due to fire. There should be an adequate fire alarm system arranged to transmit the alarm locally and simultaneously to the public fire department. A program of cooperation with the public fire department will do much to determine hidden fire hazards. Laboratories and pharmacies, where alcohol, ether and other inflammable liquids and gases are kept, should be segregated and properly protected. Refrigerators should not be used to store even small quantities of inflammable material which may be ignited by arcing electric equipment. The servicing of ambulances and other motor vehicles in hospital buildings can be hazardous. A continuing program to train hospital employees in fire safety is important. Fire drills, classroom sessions and the actual use of fire-fighting equipment will aid in safeguarding against the perils of fire. Provision should be made to prevent accidents in operating rooms where flammable anesthetics are used. A plan should be developed to evacuate patients from the locality of any fire. Exits should be kept unobstructed. Patients, visitors and staff personnel should be prohibited from smoking, in the interest of safety. Unnecessary combustibles, such as draperies and decorative sheathing, should be eliminated from hospitals, and noncombustible enclosures should be provided for all vertical openings, such as elevators, stairways and laundry chutes. When new hospitals are built, certain additional safeguards should be provided. Fire-resistive construction should be used, and standard fire cut-off walls should be constructed at all vertical openings. Operating rooms should have conductive floors. Maintenance shops and major storage facilities should be located in detached structures. Both existing hospitals and new hospitals should have automatic sprinkler systems wherever there are any concentrations of combustibles, such as in laundries, kitchens and storage rooms.

PSYCHOSIS FROM MYXEDEMA

According to Asher "Myxoedema is one of the most important, one of the least known, and one of the most frequently missed causes of organic psychoses. . . ."[1] He recently reported on fourteen instances of "myxedematous madness," which is not a newly recognized condition. It was considered common by the Committee of the Clinical Society of London in 1888. However, some physicians, while aware of the fact that dulness and poor memory are caused by myxedema, do not realize that a frank psychosis can occur. None of the 14 patients reported by Asher had been given a diagnosis previously by the physician in charge:

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[1] Asher, R.: Myxoedematous Madness, Brit. M. J. 2: 555 (Sept. 10) 1949.

10 were admitted to the mental observation wards of the hospital under the Lunacy Act. In 9 of the 14 patients a dramatic and complete recovery occurred with thyroid treatment, while in 2 more there was partial improvement. One did not show any mental change with thyroid medication, and 2 patients died. The patients reported showed various types of psychoses, among which delusions, hallucinations, paranoia, dementia and melancholia all numbered. In addition to calling attention to this apparently important cause of psychosis (at least in England), Asher offers the significant remark that, because in recorded cases of myxedema insanity the condition closely resembles paranoia, melancholia and other orthodox psychoses, other common mental disorders, such as schizophrenia and mania, may prove to be manifestations of underlying organic disease. Of similar interest are reports of euphoria in patients with rheumatoid arthritis to whom cortisone had been administered.

DURATION OF LIFE FOLLOWING SURGICAL COLLAPSE IN PULMONARY TUBERCULOSIS

An evaluation of operative treatment of pulmonary tuberculosis from the Renström Tuberculosis Hospital in Gothenburg[1] includes a study of all patients operated on from March 1931 to Oct. 1, 1948. Most of the operations consisted of apicolysis combined with partial thoracoplasty. Approximately as many men as women were included in the study, with the exception of a group treated with phrenic exeresis in which there were twice as many women as men. During the first two years, nearly all operations were total thoracoplasties (more than eight ribs removed): the first year in two stages according to Sauerbruch and the following year in one stage. In 1933-1934, most of the thoracoplasties were designed as one stage upper thoracoplasties without apicolysis. Since then radical thoracoplasties have not been performed. During 1934 the one stage upper thoracoplasties combined with apicolysis became the adopted method. In 1937 the technic was modified by two stage operations, this being the method of choice until 1942. To lower the operative mortality rate, the one stage operation was replaced by the two stage in 1943. The third rib was resected and the apicolysis accomplished in the first stage; the first and second ribs were removed at a second operation; this was followed by the removal of the lower ribs at the third stage. Evaluation in 1948 indicated that the combined mortality rate for the two stages in a three stage operation did not differ appreciably from the mortality figures after the first stage in two stage operations. In consequence, the two stage operations were utilized. The 2,216 operations were performed on 1,159 persons. Although the literature on the surgical treatment of pulmonary tuberculosis is extensive, figures are not comparable and possess limited value because they do not permit conclusions regarding the duration of life or the fatality risks in different years of observation. Two months are commonly adopted as the time demarcating operative fatality, all subsequent deaths being labeled late fatalities. In addition, a tendency exists to improve results by deducting deaths due to diseases other than tuberculosis. In the present report, results have been judged only by the mortality rate without regard to working capacity, cessation of bacillary discharge or other circumstances. The only objective should be the duration of life of the patients, but even then many imponderable circumstances might render comparisons impossible. The greatest number of deaths among surgically treated patients with pulmonary tuberculosis occur during the first year after the operation. During the years 1931 to 1937 a substantial number of phrenicus exeresis operations was performed, some later followed by thoracoplasties. Phrenicus exeresis does not have a demonstrable curative effect on pulmonary tuberculosis. As the operation, in addition, is now known to have a deleterious effect on the functioning of the lung, there are definite reasons for abandoning the method. In the early days of collapse therapy, pulmonary compression was the accepted conception of its curative mechanism. Today opinions differ. Now collapse operations aim at providing healing conditions by removing obstacles to cicatricial shrinkage. Thoracoplasty apicolysis revealed a cumulative mortality rate after nine years of observation as 38.5 per cent, as compared with 65.9 per cent for the control group. The sum of all the yearly observations during the ten year period showed an annual mortality rate of 7.2 per cent in the surgically treated group, with 14.9 per cent in the control group. The nine years' cumulative mortality rate for phrenicus exeresis was 63.7 per cent, compared with 65.4 per cent for controls, while the yearly mortality rate in ten years' observations was 12.3 per cent with 13.6 per cent for the controls. Significant for evaluation is the fact that most of the operations were performed by one operator (Lundberg).

BULLETIN 70 OF THE BUREAU OF MEDICAL ECONOMIC RESEARCH

The Bureau of Medical Economic Research of the American Medical Association has prepared a bulletin in which is reviewed the history of the attitude of the American Medical Association toward voluntary health insurance plans from 1916 to now. The Bureau concludes that the American Medical Association has never opposed the development of voluntary sickness insurance plans as they exist today. In fact, the Association has encouraged continuously the development of voluntary plans on a sound financial and medical care basis. This bulletin may be obtained on request from the Bureau.

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[1] Lundberg, S.: Experiences of Surgical Collapse Treatment of Pulmonary Tuberculosis with Particular Consideration of Postoperative Duration of Life, *Acta tuberc. Scandinav.* (Supp.) **20:** 1, 1949.

ORGANIZATION SECTION

Official Notes

WORLD MEDICAL ASSOCIATION

At the recent third general assembly in London, England, Dr. Elmer L. Henderson of Louisville, Ky., President-Elect of the American Medical Association, was elected President-Elect also of the World Medical Association. Dr. Henderson was thus honored by delegates from 30 countries. He will take over the presidency of the World Medical Association when the assembly meets in New York next October, succeeding Dr. Charles Hill of the British Medical Association. Dr. Henderson will become President of the American Medical Association at the San Francisco Session next June. At the same meeting in London Dr. R. L. Sensenich of South Bend, Ind., a recent Past President of the American Medical Association, was elected a member of the Council of the World Medical Association.

Washington Letter

(From a Special Correspondent)

Oct. 31, 1949.

Senator Dulles' Views on Socialized Medicine

As a result of prominence given the issue of compulsory health insurance in the senatorial contest between Senator John Foster Dulles (Republican, New York) and Herbert H. Lehman, the Democratic nominee, the incumbent's office received large numbers of communications commending his position against federalized medicine. Senator Dulles acknowledged their receipt with the following letter:

"It is gratifying to have your recent communication expressing opposition to the Administration's socialized medicine program. On this point we are in entire accord, for I am unalterably opposed to any attempt to impose a compulsory health program on the people and on the medical profession of this country.

"To me, socialized medicine would mean regimentation, not only of doctors, surgeons, dentists and nurses but of their patients as well. It would mean the end of the intimate professional relationship between doctor and patient, the relationship which has a vital spiritual quality. I have seen regimentation tried in Russia and in England. I do not want to see it tried in this country. There is a better way—the American way—to insure the health of our people. We must expand the already rapidly growing voluntary health plans. We must, by private and public means, speed the construction of hospitals and diagnostic centers. We must provide funds, private and public, to help overcome our shortage of doctors, nurses and medical technicians. We can do this job without socializing our medical profession."

State Health Officers Favor Department of Health

The Association of State and Territorial Health Officers reaffirmed its opposition to compulsory health insurance when, at its October meeting in Washington, it adopted unanimously a resolution condemning legislation to that end. Other resolutions called for establishment by Congress of a Department of Health in the President's Cabinet, to be headed by a career physician of the U. S. Public Health Service; government support of a personnel procurement pool that would be administered by the American Public Health Association; federal financial aid to medical schools for strengthening of instruction in public health, and U. S. Public Health Service cooperation in arranging for a communicable disease conference in 1950 similar to the one recently held in Atlanta. Dr. Wilton L. Halverson, California director of health, was elected president of the association. Dr. Roy L. Cleere, of Colorado, was elected vice president and Dr. L. E. Burney, of Indiana, was reelected secretary-treasurer.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

American Academy of Pediatrics, San Francisco, Nov. 14-17. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Medical Women's Association, Midyear Meeting, Tucson, Ariz., Nov. 10-11. Dr. Grace Talbott, 49 W. 49th St., New York 20, Corresponding Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 5-7. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

American Society of Tropical Medicine, Memphis, Tenn., Nov. 6-9. Dr. Frederick J. Brady, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Nov. 10-12. Col. James M. Phalen, Army Institute of Pathology, Washington 25, D. C., Secretary.

International College of Surgeons, United States Chapter, Atlantic City, Haddon Hall,. Nov. 7-12. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago 10, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Defillo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Cincinnati, Nov. 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Southwestern Medical Association, Albuquerque, New Mexico, Nov. 9-12. Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Texas, Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

Woman's Auxiliary

CONFERENCE OF PRESIDENTS AND CHAIRMEN

The Woman's Auxiliary of the American Medical Association held a conference of state presidents, presidents-elect and national chairmen of standing committees in Chicago, November 3-4. The conference theme was the American Medical Association's Twelve Point Program. After a business meeting there was a question and answer period and a discussion of auxiliary activities. On the conference program were Dr. Andrew C. Ivy, vice president, University of Illinois, who spoke on "Medical Education and Research"; Dr. James R. Miller of the Board of Trustees, on "Commission on Chronic Illness"; Fred V. Hein of the American Medical Association headquarters, on "School Health Program"; Lawrence Rember of the American Medical Association headquarters, on "Public Relations," and Thomas A. Hendricks of the Council on Medical Service, "The Dead Horse and Community Health Leadership." At the Thursday luncheon, Mrs. Charles W. Sewell of the Associated Women of American Farm Bureau discussed "The Farm Bureau Federation and the Health Problem." At the Friday luncheon, the speakers were the following officers of the American Medical Association: Drs. Ernest E. Irons, President; Elmer L. Henderson, President-Elect; J. J. Moore, Treasurer, and George F. Lull, Secretary and General Manager.

GOVERNMENT SERVICES

ARMY

NEW PLAN TO CONSERVE PROFESSIONAL PERSONNEL

A newly adopted Army plan will result in greater economy in the use of scarce professional personnel in military hospitals in theaters of operations according to Major Gen. R. W. Bliss, the Surgeon General.

Under this plan fewer physicians or dentists will be ordered to active duty with Army medical units until those units are ready to move into a theater of operations. General Bliss said, "This should allow each doctor to remain in active practice in his community until the Army has an actual need for his services with troops in combat."

The new plan is the result of an intensive study of experiences of the Army Medical Department during World War II. At that time doctors were required to join units while medical technicians and administrative personnel were being trained in the setting up, operating and dismantling of mobile field medical equipment. This resulted in a loss of skilled professional manpower, not only to the Army but to the doctor's civilian community as well.

Hospital personnel will now be divided into two groups—administrative and professional personnel. The professional group will be known as the "professional complement" and will be made up of physicians, dentists, nurses and other specialists. They will not be required to join the unit until such time as the unit is engaged in the actual care of patients. Further, when the requirement for this group has ceased, they may be moved to another theater of operations or to another area within a theater where their professional services will be put to use with a minimum of delay. The administrative group would remain to oversee the moving of equipment and records of the unit. In this way maximum use may be made of the professional complement's services.

Of the forty-seven professional persons required for a type of field hospital, under the new plan, only four officers would be required at all times for duty with the unit. The remaining forty-three officers would not be needed during the organization and training period of the unit. Although more applicable to wartime than to peacetime conditions, all field type Army hospitals will eventually be organized according to this plan.

APPOINT NEW DIRECTOR OF LIBRARY

Major Frank B. Rogers (MC) was named director of the Army Medical Library at the Sixth Annual Meeting of the Association of Honorary Consultants to The Library, October 21. Major Rogers has been assistant director under Col. Joseph H. McNinch (MC), who is being reassigned to the Office of the Surgeon General. Colonel McNinch will continue as chief of the Historical Division, where he is supervising the preparation of the history of the Army Medical Department in World War II. Major Rogers received his Master's Degree in Library Service in June of this year at Columbia University, which gives him the distinction, the Surgeon General's office states, of being one of the two men in the world who is both a physician and a librarian.

Major Rogers received his A. B. degree at Yale in 1936 and his M.D. degree at Ohio State University in 1942 and interned at Letterman Army General Hospital in San Francisco. He entered the military service in 1943.

MONTHLY MEDICAL MEETING

At the monthly medical meeting of the Surgeon General held October 20 at the Army Medical Center, Washington, D. C., Col. Carl W. Tempel (MC) chief of the Tuberculosis Branch at Fitzsimons General Hospital, Denver, discussed "Recent Advances in the Treatment of Pulmonary Tuberculosis." Dr. Esmond R. Long, director, Henry Phipps Institute, Philadelphia, and consultant on tuberculosis to the Surgeon General, opened the discussion.

NAVY

CORRESPONDENCE COURSES

The following additional correspondence courses administered by the Bureau of Medicine and Surgery are available for distribution and may be obtained from the Bureau of Medicine and Surgery, Washington, D. C., by qualified Regular and Reserve medical department personnel on request:

Title of Course	Promotion Units	Retirement Points
Clinical Laboratory Procedures	3	36
Special Clinical Services (General)	2½	32
Tropical Medicine in the Field	2½	32
Combat and Field Medicine Practice	2½	32
Functions of Officers of Medical Department	1	12
Submarine Medicine Practice	2½	32
Aviation Medicine Practice	2½	32
Naval Preventive Medicine	3	36
Special Clinical Services (Dental)	2½	32

Officers of the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps and Hospital Corps of the regular Navy and Naval Reserve are eligible to enroll in any one of these courses. Enlisted personnel of the Hospital Corps are eligible to enroll for the Clinical Laboratory Procedures course and for the Special Clinical Services (General) course.

Applications for enrolment should be made to the Bureau of Medicine and Surgery via appropriate official channels; they must include the full name of the applicant, rank or rate, corps, file or service number and the address to which the material is to be forwarded.

INSECTICIDE SPRAY FOR OVERSEAS TRANSPORT PLANES

An insecticide spray system designed to rid overseas transport planes of dangerous insect pests before they arrive in the United States has been developed by the Navy in cooperation with the U. S. Public Health Service and the Department of Agriculture. The system, which the pilot operates by pushing a button on his control panel, automatically sprays the proper quarantine dosage of freon®-propelled insecticide throughout the interior of aircraft. The new equipment is used to spray the interior of a transport plane with a heavy dosage of insecticide sufficient to kill the more resistant crawling insects before any passengers go aboard. This is followed with a lighter spray dosage, after the passengers are seated and the plane is airborne, to destroy any flying insects that may have entered during the loading process.

NEW FLIGHT SURGEONS

The following naval flight surgeons recently received their diplomas at the Naval School of Aviation Medicine, Pensacola, Fla.

Squadron Leader Jemi Manekshaw (Royal Indian Air Force), Bombay, India.

Lieut. Oscar A. Oliva Otero (Argentine Navy), Cordoba, Republica Argentina.

Lieut. (jg) Joseph L. Mays, Jackson, Ga.

Lieut. (jg) David R. Robers, Glade Spring, Va.

PUBLIC HEALTH SERVICE

REGULAR CORPS EXAMINATION FOR SCIENTISTS AND SANITARIANS

Examinations for scientists and sanitarians (entomologists, parasitologists and protozoologists) will be held December 12-14 in various cities throughout the country. Completed applications must be in the Washington Office by November 14. Appointments are permanent and provide opportunities for career service in research and public health activities. Appointments will be made in the grade of assistant and senior assistant, equivalent to Army ranks of first lieutenant and captain, respectively. Minimum requirements for assistant and senior assistant scientist are a doctor's degree and seven years' training and experience after high school; for assistant and senior assistant sanitarian a master's degree and seven years' training and experience after high school are required.

For information write to: Surgeon General, United States Public Health Service, Federal Security Agency, Washington 25, D. C. Attention: Division of Commissioned Officers.

GLAUCOMA SCREENING PROGRAM

Surgeon General Leonard A. Scheele announced on October 9 that the Public Health Service and the Philadelphia Committee for the Prevention of Blindness had signed a cooperative agreement under which the service will offer its help to enable employment of a full time staff for a mass glaucoma-screening program. This is the first time that the Public Health Service has formally participated in the conservation of eyesight with a private agency. A pioneer program for glaucoma screening has been conducted by the Philadelphia Committee for the Prevention of Blindness. The examinations showed that of more than 5,300 persons over the age of 40 who ostensibly had normal eyesight 2.7 per cent were victims of glaucoma. On the basis of studies made, it is estimated that 800,000 persons in the United States have glaucoma without being aware of the disease. Early symptoms are so mild that the person affected usually does not seek medical care until his eyesight is impaired or lost.

VETERANS ADMINISTRATION

NEW HOSPITAL IN CHICAGO

The Veterans Administration has announced the award of a $6,985,905 contract to the J. L. Simmons Company, Chicago, for the construction of a 500 bed general hospital. The building site is a 13 acre tract in the medical center district on Chicago's west side.

Construction will include a 4,274,000 cubic foot main hospital building, recreation hall, chapel, nurses and attendants quarters, boiler house, radial brick chimney, steel flag pole, electrical substation and connecting corridor. The buildings will have concrete foundations, brick-faced exterior walls with stone trim backed with hollow tile, reinforced concrete floors and built-up roofs.

NEW HOSPITAL IN PHILADELPHIA

Bids will be accepted until December 6 for the construction of a 500 bed hospital in Philadelphia on an 18 acre site near the University of Pennsylvania Medical School and General Hospital. The construction project consists of a hospital building, nurses quarters, apartment building, attendants' quarters, garage, laundry and other structures. The buildings generally are to have concrete foundations, structural steel framing and reinforced concrete floors. Walls are to have brick-faced exteriors with stone trim and backed with hollow tile. Bids, prepared in triplicate, should be addressed to the Director, Construction Service, Veterans Administration, Washington 25, D. C.

MISCELLANEOUS

SEND RADIOISOTOPES TO FOREIGN COUNTRIES

The Atomic Energy Commission announced that, in the two years since September 1947, 616 shipments of radioactive isotopes have been made to twenty-two countries for use in medical research and therapy and scientific research. The radioactive materials available for export have been limited to twenty radioisotopes which are of primary value for clinical and biologic applications.

About 90 per cent of the foreign isotope shipments have been used in the fields of medical therapy or physiologic research. Research investigations are concerned with such problems as studying the metabolism of proteins, nucleic acids and phosphorus-containing compounds, the behavior of the thyroid gland under various conditions and the biologic production, absorption and excretion of penicillin. Present indications are that the results of foreign studies will provide valuable information to researchers in the United States.

A drawback to wider foreign utilization of radioisotopes has been the lack of trained personnel. To assist in overcoming this difficulty, the commission has approved attendance of a limited number of foreign scientists from countries which have qualified to receive isotopes, at the courses in radioisotope technic being offered by the Oak Ridge Institute of Nuclear Studies. To date sixteen scientists from Belgium, Canada, Denmark, Finland, India, Netherlands, New Zealand, Norway, Spain and England have attended these courses.

The British have already commenced shipment of radioisotopes to various European countries. The commission is cooperating with British and Canadian representatives in matters related to policies of radioisotope distribution. To qualify for receipt of radioisotopes produced in Commission facilities, a foreign country must first make application through diplomatic channels to the Department of State and agree to use the material only in the manner described in the request and to report semiannually to the commission on progress of research work done with isotopes. Each country also agrees to permit qualified scientists, irrespective of nationality, to visit those laboratories where isotopes are being used.

EIGHTEEN RESEARCH PROPOSALS

The Atomic Energy Commission Division of Biology and Medicine has approved eighteen research proposals during the past three months, Dr. Shields Warren, division director, has announced. Negotiations leading to the award of contracts covering the newly approved research projects are under way. The contracts will be awarded by the Atomic Energy Commission Operations Office nearest the institution conducting the research. Approval of the proposals was recommended in each case by the Atomic Energy Commission Advisory Committee on Biology and Medicine. The award of contracts to the eighteen institutions involved will bring to a total of one hundred and fifty the number of research projects supported by the Atomic Energy Commission being carried on in medicine, biology, cancer studies and biophysics at universities, hospitals and research centers. About $5,000,000 has been earmarked by the commission for support of such research in nongovernment agencies during fiscal year 1950.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Lane Medical Lectures.—The thirtieth course of Lane Medical Lectures will be presented October 31, November 3, 7 and 10 at 8:15 p. m. in Lane Hall, Stanford University School of Medicine, San Francisco. Dr. James L. Gamble, chairman, department of pediatrics, Harvard Medical School, Boston, will deliver the lectures, the titles of which will be as follows: "Normal and Morbid Anatomy of the Electrolyte Structure," "The Interdependence of Water and Electrolyte Balance," "Processes of Dehydration" and "Rationale of Parenteral Fluid Therapy." Physicians, students, teachers and research workers in medicine and allied sciences are invited to attend.

CONNECTICUT

Progress of Cardiac Survey.—A total of 610 children were examined during the past school year in the New Haven Rheumatic Fever and Cardiac Program established in 1947 in cooperation with the State Department of Health and the department of pediatrics of Yale University School of Medicine. There were 189 with rheumatic fever or rheumatic heart disease; 14 unsuspected cases of acute rheumatic fever were discovered. Rheumatic heart disease was found in 134, 83 of whom had a history of rheumatic fever. Congenital heart disease was found in 70 cases, 16 unsuspected. Functional murmurs with no heart disease were discovered in 348 cases. Four of the children had arrhythmias, and 26 had hypertension. A corrected cardiac registry has recently been started with the help of privately donated funds. It is hoped that through contact with the individual doctors concerned with patients on the registry, progress of these children through the school years will be followed and evaluation of services needed can be made.

ILLINOIS

Assembly Hour Lecture.—Dr. Frederic T. Jung, Assistant Secretary, Council on Physical Medicine and Rehabilitation, American Medical Association, delivered the assembly hour lecture at the University of Illinois, Chicago Professional Colleges, October 26, on "Medical Quackery."

Chicago

Reception to James B. Herrick.—Several hundred fellows of the Institute of Medicine and guests paid tribute to Dr. and Mrs. James B. Herrick at a reception with the University of Chicago press at the Institute of Medicine on October 24. The reception was given to mark the publication of Dr. Herrick's autobiography, "Memories of Eighty Years."

Joint Meeting.—A joint meeting of the Chicago Society of Internal Medicine and Institute of Medicine of Chicago will be held November 28 at the Drake Hotel at 8 p. m. The following program has been prepared:

Robert J. Hasterlik, Evanston, Beryllium Poisoning.
Dwight E. Clark, Chicago, Diagnosis and Treatment of Thyroid Diseases with Radioactive Iodine.
John Martin, Chicago, Use of Radioactive Isotopes in Neurologic Diagnosis.

Award Koessler Fellowship.—The Jessie Horton Koessler Fellowship for the aid of research in biochemistry, physiology, bacteriology or pathology, which carries a stipend of $500, has been awarded for 1949-1950 to Charlotte Robertson, who received her A.B. from the University of Illinois in 1948. She will work under the direction of Dr. Andrew C. Ivy, department of clinical science, University of Illinois College of Medicine, on the loss of sensitivity to stimulation by cholenergic drugs manifested by denervated sweat glands.

The Abt and Hess Lectures.—Dr. Sidney Farber, Boston, delivered both the Isaac Abt and Julius Hess lectures in the Archibald Church Library of Northwestern University, Chicago, October 18 on "Cancer in Children: An Experimental Approach to Therapy" and at the University of Illinois College of Medicine, Chicago, October 19 on "Cancer in Children: Life History and Biological Behavior." The twin lectureships are being established by the Phi Delta Epsilon Medical Fraternity at Northwestern University Medical School and at the University of Illinois College of Medicine.

Biennial Milk Survey.—On October 10, the U. S. Public Health Service and the Illinois Department of Public Health began the biennial sanitation survey of the Chicago milk shed. The survey, the completion of which requires about eight weeks, will rate Chicago's compliance with the requirements of the Public Health Service grade A milk ordinance. The survey will cover several hundred of the 20,912 farms, one third of the 116 milk-receiving stations and one half of the 87 pasteurization plants which supply Chicagoans with over 1,750,000 quarts of grade A milk a day. Farms, receiving stations and pasteurization plants will be selected at random for the study. The survey teams will investigate the physical conditions, maintenance and sanitation of dairy farms in northwestern Wisconsin, central and southern Wisconsin, Illinois, northern Indiana and central Michigan which produce milk for Chicago. During the period 1947 and 1948, Chicago was the only city in the country with over 100,000 population to be awarded a Public Health Service milk sanitation rating of more than 90 per cent. About 4,000 dairy farms have been added to the Chicago milk shed since the last biennial survey in September 1947.

INDIANA

State Medical Election.—The Indiana State Medical Association at its recent meeting in September chose the following officers for the coming year: Drs. Claude S. Black, Warren, president; Alfred H. Ellison, South Bend, president-elect, and Arthur F. Weyerbacher, Indianapolis, treasurer.

Healthwin Hospital Dedicated.—The dedication of Healthwin Hospital, St. Joseph County, South Bend, Ind., was held September 17. Dr. Ernest E. Irons, Chicago, President of the American Medical Association, delivered the address. Healthwin Hospital began as a tuberculosis camp in 1908. Its modernization program, just completed, was financed by the St. Joseph County Council, which appropriated $1,522,000 for the project. Its facilities for the care of the tuberculous are complete. It has beds for 185 patients and quarters for a staff of 85. In addition, there are classrooms for patients to continue their education through high school, shops for vocational training and occupational therapy and recreational facilities.

KENTUCKY

State Medical Election.—At the annual meeting of the Kentucky State Medical Association in October the following officers were elected: Drs. Hugh L. Houston, Murray, president, and Samuel A. Overstreet, Louisville, president-elect; Bruce Underwood and Woodford B. Troutman, both of Louisville, will continue to serve as secretary and treasurer, respectively.

Testimonial to Dr. Elmer L. Henderson.—Members of the Jackson County Medical Society and other friends gave a testimonial dinner to Dr. Elmer L. Henderson of Louisville in the Brown Hotel, October 26, in honor of his recent election as President-Elect of the American Medical Association. The toastmaster was Dr. J. B. Lukins, and the address was given by Dr. Louis H. Bauer of Hempstead, N. Y., Chairman, Board of Trustees, American Medical Association; other speakers were Drs. Harrison H. Shoulders, Nashville, Tenn., past president of the American Medical Association; George F. Lull, Chicago, Secretary and General Manager; Fred W. Rankin, Lexington, past president of the American Medical Association, and J. Murray Kinsman, dean of the University of Louisville Medical School.

MASSACHUSETTS

Public Health Association Meeting.—The Massachusetts Public Health Association will hold its annual fall meeting at Simmons College, Boston, on November 17. Fourteen experts will speak during the afternoon session. The general evening session will feature a panel discussion entitled "How John Q. Boston Was Persuaded To Be X-Rayed." Dr. John F. Conlin, general chairman of the Boston Chest X-Ray Program and director of medical information and education, Massachusetts Medical Society, will serve as panel leader. A second panel, led by Dr. Sidney Cobb, Ayer, director of the Nashoba Associated Boards of Health, will consider the problem "Should We Let Community Organization Die?"

Report of Kennedy Foundation.—The Joseph P. Kennedy Jr. Memorial Foundation on August 12 reported gifts totaling $440,000 to various Massachusetts organizations. The Lahey Foundation, Boston, received $50,000; the building fund of Kennedy Memorial Hospital for crippled children, Boston, $125,000; St. Coletta's School for Children at Hanover, $100,000; Shriner's Hospital for Crippled Children, Springfield, $75,000; Cape Cod Hospital, Hyannis, $15,600, and other special gifts, $74,400. The gifts brought to $1,500,000 the total presented by the foundation since its establishment four years ago in memory of Mr. Kennedy, oldest son of the former ambassador to Great Britain, who died in action during the recent war while serving as a lieutenant in the U. S. Navy Air Forces.

MISSOURI

Postgraduate Seminar at Fayette.—The Missouri Academy of General Practice is offering a postgraduate seminar at Fayette for general practitioners in central Missouri. The course began on October 12 and will be held each Wednesday through November 16 at 7 p. m. Dr. Merl J. Carson, assistant dean of Washington University School of Medicine, St. Louis, arranged for the schedule, which will be conducted by the medical school staff. No registration fee is charged. Similar meetings will be held in various sections of the state in order that refresher courses will be provided for rural physicians in their immediate vicinity. For information communicate with Dr. William Shaw of Fayette, Mo.

NEW YORK

Postgraduate Instruction.—The Utica Academy of Medicine will be addressed November 17 by Dr. Frederick H. Vom Saal, New York, on "Intramedullary Fixation of the Femur and Tibia." The Fulton County Medical Society on November 17 at 9 p. m. at the Eccentric Club, Gloversville, will hear Dr. Francis D. Speer, New York, speak on "Clinical and Laboratory Fundamentals in Fluid-Electrolyte Balance." This instruction has been arranged by the Medical Society of the State of New York with the cooperation of the New York State Department of Health.

New York City

Personal. — Dr. Robert S. Hotchkiss has been appointed professor and chairman of the department of urology at the New York University Post-Gradute Medical School, a unit of the New York University Bellevue Medical Center. Dr. Hotchkiss was a member of the faculty at New York University for many years and then left to become associate professor of surgery at Cornell University Medical College.

Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Livingston Seaman Fund for the furtherance of research in bacteriology and sanitary science. Twelve hundred dollars is available for assignment in 1949. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman and is administered by a committee of the academy under the following regulations: (1) The committee will receive applications either from institutions or individuals up to Nov. 15, 1949. Communications should be addressed to Dr. Wilson G. Smillie, chairman, Louis Livingston Seaman Fund, 1300 York Avenue, New York 21. (2) The fund will be expended only in grants in aid for investigation or scholarships for research in bacteriology or sanitary science. The expenditures may be made for (*a*) securing of technical help, (*b*) aid in publishing original work and (*c*) purchase of necessary books or apparatus.

PENNSYLVANIA

Conference on the Exceptional Child.—A conference will be held under the auspices of the Child Research Clinic of the Woods Schools, Langhorne, Pa., in collaboration with the departments of Health, Public Instruction and Welfare of the Commonwealth of Pennsylvania at the Education Building Forum, Harrisburg, November 7. Speakers included in the program are:

Hon. James H. Duff, Pennsylvania's Child Welfare Program.
Mr. Richard Thorington, Philadelphia, Financial Provision for Public or Private Care of the Exceptional Child.
J. Franklin Robinson, Wilkes-Barre, Surgery, Drugs and Other Therapeutic Approaches to the Treatment of the Exceptional Child.
Richard H. Hungerford, Ph.D., New York, Vocational Planning for the Exceptional Child Who Can Be Wholly or Partly Self Sustaining.
Leslie B. Holman, Durham, N. C., A Philosophic Approach to the Exceptional.

A panel discussion will be held on "Certain Contemporary Problems Concerning the Exceptional Child." The moderator will be Lester N. Myer, Ph.D., chief, Division of Special Education, Department of Public Instruction of Pennsylvania.

Philadelphia

Center for Preventive Medicine.—Ground-breaking ceremonies were held October 17 for a $1,500,000 diagnostic medical health center to provide preventive medical care for about 25,000 clothing workers in Philadelphia. The project will be financed and operated jointly by the Philadelphia Clothing Manufacturers Association and the Amalgamated Clothing Workers of America, CIO. Funds to cover construction and equipment were accumulated over the last three years. The center, a two story building of steel and concrete, will occupy 45,000 square feet and will include reception and examination rooms, an auditorium for lectures and films on preventive medicine.

Pittsburgh

Huggins Memorial Lecture.—Dr. Andrew C. Ivy of the University of Illinois College of Medicine, Chicago, will deliver the R. R. Huggins Memorial Lecture of the University of Pittsburgh School of Medicine on November 18 at 8:30 p. m. at the Mellon Institute, Pittsburgh. This is the fourth in the series of annual lectures sponsored by Nu Chapter of the Phi Delta Epsilon Fraternity. The subject of Dr. Ivy's address will be "Medical Ethics, Democracy and Medical Care."

PUERTO RICO

American College of Physicians. — The first regional conference of the American College of Physicians was held at the Medical Association building in San Juan on October 16. Dr. Rafael Rodriguez-Molina is chairman of the local chapter. A number of medical physicians from United States and Latin American universities were present. The following doctors participated in the conference: Eduardo R. Pons, Mercedes Vicente de Torregrosa, Enrique Koppisch, José Oliver González, Hugh J. Morgan, Ramón M. Suárez, F. Hernández Morales, E. Pérez Santiago, Rurico S. Díaz Rivera, Antonio Ortiz and Roberto Feliciano.

Medical School to Open in 1950.—The School of Medicine of the University of Puerto Rico will start operations in August 1950, Jaime Benitez, rector of the University, announced on his return after a series of conferences with officials of Columbia University, New York. Several professors from the United States will teach at the new medical school in San Juan. Puerto Rican physicians will also be on the staff. The first year will start with fifty students. Columbia University granted Dr. Brown a leave of absence to take charge during this year as special assistant in charge of medical affairs of the University of Puerto Rico. The facilities of the Tropical School of Medicine and the University of Puerto Rico will be used to carry on this project.

Public Health Anniversaries Observed.—On August 12 Puerto Rico celebrated the twenty-fifth anniversary of the beginning of social work on the island and the sixth anniversary of the Insular Health Department's Division of Public Welfare. Central figure at the Jubilee was Miss Nellie Foster, who put social work on an active footing in Puerto Rico. She came to the island from Chicago in 1924 and became superintendent of the Insular Health Department's newly established Social Research Branch. After organizing activities, she left the island and did not return until invited to the jubilee as a guest of honor. Dr. Antonio Fernos Isern, San Juan, Puerto Rico's resident commissioner in Congress, was also honored at the ceremonies. Insular social work began during his term as assistant commissioner of health, and the public welfare service came into existence during his second term as health commissioner.

GENERAL

Clinical Research Society Meeting.—The twenty-second annual meeting of the Central Society for Clinical Research will be held in Chicago at the Drake Hotel November 4-5. Thirty-seven papers will be presented. There is no registration fee or charge for admission.

Grants for Ophthalmologic Research.—The National Council to Combat Blindness, which was established to finance and stimulate ophthalmologic research, is offering grants in aid to scientific investigators. Application forms, which should be in the office of the council by Feb. 15, 1950, may be obtained by addressing the Secretary, National Council to Combat Blindness, Inc., 1186 Broadway, New York 1.

Meeting of Military Surgeons.—The annual meeting of the Association of Military Surgeons of the United States will be held November 10-12 in the Hotel Statler, Washington, D. C. Active and inactive officers of the medical, dental, veterinary and medical services, nurses and women's specialty corps are cordially invited to attend. A program of forum lectures and panels will be presented by civilian and military authorities. A special program entirely devoted to the affairs of the reserve components will be conducted by reserve officers on November 12.

Drs. Graham and Alcock Honored. — Drs. Evarts A. Graham, St. Louis, and Nathaniel G. Alcock, Iowa City, were awarded a gold medal and a certificate, respectively, at the recent annual meeting of the Mississippi Valley Medical Society. Dr. Alphonse McMahon, president, presented the awards. Dr. Graham is professor of surgery and head of the department, Washington University School of Medicine. He is a graduate of Rush Medical College, 1907, and is a past president of the American Association of Thoracic Surgeons, American Surgical Association and American College of Surgeons. Dr. Alcock has served for many years as professor and head of the department of urology at the State University of Iowa College of Medicine, Iowa City. He is a graduate of Northwestern University Medical School, 1912, and president of the Iowa State Medical Society.

Schering Fellowship Award.—Dr. D. Laurence Wilson of Kingston, Ontario, Canada, has been awarded the 1949 Schering Research Fellowship in Endocrinology, which carries with it a fund of $2,500. The award is presented through the Society for the Study of Internal Secretions. Dr. Wilson will pursue research work in metabolic and endocrine diseases, under the direction of Dr. George W. Thorn, Hersey Professor of Medicine at Harvard Medical School, Boston. Dr. Wilson is a graduate of Queen's University Faculty of Medicine, Kingston, 1944.

Joint Meeting at Albuquerque.—The Southwestern Medical Association Conference and the New Mexico Division of the American Cancer Society will meet November 9-12 at the Hilton Hotel, Albuquerque, N. Mex. Guest speakers include:

Elexious T. Bell, Minneapolis, Experimental Production of Cancer.
Kenneth D. A. Allen, Denver, Practical Consideration of Carcinoma of the Cervix Uteri.
Otto C. Brantigan, Baltimore, Carcinoma of the Lung.
William Boyd, Toronto, Canada, The Spread of Tumors.
Evans W. Pernokis, Chicago, Leukemia.
Herbert F. Traut, San Francisco, The Vaginal Smear in Gynecologic Diagnosis.
Elmer Belt, Los Angeles, Office Urology.
Herbert W. Meyer, New York, Diaphragmatic Hernia.
Donald M. Pillsbury, Philadelphia, Practical Management of Superficial Fungus Infections of the Skin.
William A. H. Rettberg, Denver, Indications for Antibiotics.
Allan M. Butler, Boston, Parenteral Fluid Therapy.

Any Doctor of Medicine is welcome to register and attend the sessions.

National Foundation for Eye Research.—An organization known as the National Foundation for Eye Research, founded in Washington, D. C., proposes to raise funds for ophthalmic research aimed at discovering the causes and developing more efficacious therapies for ocular diseases leading to blindness. The activities of the foundation will be limited entirely to supporting and establishing research centers for ophthalmology, leaving other approaches to the prevention of blindness and rehabilitation of the blind to existing agencies. Mr. George Swartz, well known for his promotion of other medical philanthropies, has been selected as national chairman. The allocation of funds for research purposes will be made on the advice of a Scientific Advisory Board, consisting of V. Everett Kinsey, Ph.D., Boston, chairman, Dr. Francis H. Adler, Philadelphia; Dr. Edwin B. Dunphy, Boston; Dr. Jonas S. Friedenwald, and Dr. Alan C. Woods, both of Baltimore. Members will be added to the board as the need for expansion arises.

New England Postgraduate Assembly.—This organization will hold its eighth annual meeting in the Copley Plaza Hotel, Boston, November 9-11, sponsored by the Medical Societies of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut. Guest speakers will be:

T. Grier Miller, Philadelphia, The Patient Who Is Yellow.
Alvan L. Barach, New York, Medical Treatment of Bronchiectasis.
Cushman D. Haagensen, New York, Duty of the General Practitioner in the Diagnosis of Cancer.
O. Theron Clagett, Rochester, Minn., Surgical Aspects of Carcinoma of the Lung.
J. Lawrence Pool, New York, Neurosurgical Relief of Intractable Pain.
Louis B. Jaques, Ph.D., Saskatoon, Saskatchewan, Canada, Anticoagulant Therapy.
Warren H. Cole, Chicago, Diagnosis and Therapeutic Considerations of Abdominal Pain.
R. Gordon Douglas, New York, Amenorrhea and Nonmenstrual Bleeding.
John E. Dees, Durham, N. C., Congenital Anomalies of the Upper Urinary Tract.
Homer W. Smith, Sc.D., New York, Physiologic Aspects of Hypertension.
T. Campbell Thompson, New York, Arthritis; Orthopedic Aspects.
Theodore E. Woodward, Baltimore, Therapeutic Results with Aureomycin and Chloramphenicol.
Esther L. Richards, Baltimore, Emotional Problems and Behavior in Childhood.
T. McNair Scott, Philadelphia, Virus Infection in Infancy and Childhood.
Joseph H. Burchenal, New York, Chemotherapy of Neoplastic Disease.
Richard H. Freyberg, New York, Clinical Aspects with Cortisone, Adrenocorticotropic Hormone and Other Steroids in Rheumatic Disease.

Medical students, interns, residents and full time research fellows are invited as guests at the scientific sessions. The registration fee is $2. Registration and reservations for the dinner and jamboree should be made by mail in advance.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

	Week Ended			*Jan. 1 to*	
Division and State	Oct. 22, 1949	Oct. 23, 1948	Median, 1944-1948	Oct. 22, 1949	Oct. 23, 1948
New England States					
Maine	10	..	..	429	37
New Hampshire	1	..	1	178	18
Vermont	5	..	2	125	20
Massachusetts	61	4	27	1,660	175
Rhode Island	5	1	1	145	8
Connecticut	17	5	12	541	107
Middle Atlantic States					
New York	138	55	63	4,920	1,266
New Jersey	58	32	26	1,298	600
Pennsylvania	36	33	33	695	614
East North Central States					
Ohio	52	52	49	1,604	1,060
Indiana	22	8	8	1,019	318
Illinois	63	41	41	2,652	992
Michigan	67	39	23	2,521*	610
Wisconsin	43	47	47	947	507
West North Central States					
Minnesota	40	72	26	1,716	1,098
Iowa	15	79	18	1,021	975
Missouri	50	7	13	1,253	263
North Dakota	2	3	..	437	113
South Dakota	7	121	10	340	468
Nebraska	24	20	6	569	650
Kansas	23	12	12	668	263
South Atlantic States					
Delaware	4	3	2	42	126
Maryland	14	7	7	213	96
District of Columbia	3	5	4	92	117
[illegible]	13	18	9	209	509
[illegible]	7	10	10	322	149
[illegible]	6	42	13	213	2,373
South Carolina	..	6	3	97	344
Georgia	10	11	10	192*	212
Florida	3	6	9	220	237
East South Central States					
Kentucky	18	3	3	573	181
Tennessee	15	13	8	479	344
Alabama	1	9	3	222	198
Mississippi	9	3	3	311	143
West South Central States					
Arkansas	22	3	3	924*	133
Louisiana	5	1	3	213	134
Oklahoma	31	3	3	1,193	336
Texas	57	28	18	2,088	1,580
Mountain States					
Montana	5	..	1	85	60
Idaho	18	2	2	430	100
Wyoming	2	3	..	103	71
Colorado	13	5	3	595	107
New Mexico	9	1	1	187	70
Arizona	1	12	1	142	135
Utah	22	13	5	237	89
Nevada	..	1	..	16	7
Pacific States					
Washington	18	21	15	524	280
Oregon	15	12	6	251	152
California	98	206	46	2,087	3,952
Total	1,148	1,078	...	37,087*	22,588
Median, 1944-1948	....	.....	722	16,856	

* Deductions: Arkansas, 1 case week ended October 1; Michigan, 1 case week ended September 3 and 1 case week ended September 24; Georgia, 1 case week ended October 1.

CORRECTION

Tonsillectomy During Epidemic Poliomyelitis.—In a letter to the editor under this title in THE JOURNAL October 22, page 548, in the third paragraph, sixth line, the words "in 1946 are correct" should read "in 1946 are incorrect."

University Names Four Department Heads.—Under New York City news in THE JOURNAL October 8, page 400, the information concerning Drs. Thomas Kirwin and Sprague Carleton should refer to their appointment in the Department of Urology in each instance, and not to the Department of Neurology as was stated in the item.

Marriages

JOHN R. FINLAY, Yorktown Heights, N. Y., to Dr. VERA E. MILANICK of Frackville, Pa., August 8.

PAUL S. BLAKE, Minneapolis, to Miss Patricia Louise Breher of Wadena, Minn., August 29.

JACK P. MERCER, Toledo, Ohio, to Miss Carolyn Johnson of Eaton, August 20.

Deaths

William David McFee ⊕ Haverhill, Mass.; born in St. John, New Brunswick, Canada, Oct. 13, 1874; University of Vermont College of Medicine, Burlington, 1897; past president of the American Academy of Physical Therapy; formerly secretary of the New England Society of Physical Medicine; in 1928 represented this country in Stockholm, Sweden, at the International Congress of Radiology and Physiotherapy; served as a major in the medical corps of the U. S. Army during World War I; later director of physical therapy at the Walter Reed General Hospital in Washington, D. C.; served as mayor and city physician; affiliated with the Haverhill Municipal Hospital; died September 6, aged 74, of bronchopneumonia.

Samuel J. Morris ⊕ Colonel, U. S. Army, retired, Chevy Chase, Md.; born April 23, 1877; Columbian University Medical Department, Washington, D. C., 1901; fellow of the American College of Surgeons; entered the U. S. Army as an assistant surgeon in 1902; served during World War I; during his army career served at many stations in this country and abroad, including the Philippine Islands and the Panama Canal Zone; at one time stationed at the Headquarters Eighth Corps Area, Fort Sam Houston, Texas; promoted through the various ranks and in 1928 became a colonel; retired July 31, 1940; died at Fort Jay on Governors Island, N. Y., September 1, aged 72.

Walter Edward Camp ⊕ Minneapolis; born in Springfield, Mo., Sept. 21, 1889; University of Minnesota Medical School, Minneapolis, 1915; clinical assistant professor of ophthalmology and otolaryngology at his alma mater and clinical assistant professor of ophthalmology at the University of Minnesota Graduate School; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; affiliated with the Abbott Hospital, Minnesota General Hospital and Northwestern Hospital, where he died September 5, aged 59, of carcinoma of the esophagus.

Robert Leonard Mason ⊕ Wellesley Hills, Mass.; Harvard Medical School, Boston, 1922; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; veteran of World Wars I and II; affiliated with the Marlborough Hospital, Marlboro, Cambridge City (Mass.) Hospital, Faulkner Hospital, New England Baptist Hospital, Massachusetts Woman's Hospital and Robert Breck Brigham Hospital, all in Boston, Community Memorial Hospital, Ayer, and the Emerson Hospital, Concord; author of "Pre-operative and Post-Operative Treatment"; died September 21, aged 52, of cerebral hemorrhage.

Thomas Lee Adams, Calmer, Ark. (licensed in Arkansas in 1906); died in the Davis Hospital, Pine Bluff, August 16, aged 76.

Walter Levi Bates, Greenville, S. C.; Vanderbilt University School of Medicine, Nashville, 1919; member of the American Medical Association; affiliated with Greenville General Hospital and St. Francis Hospital; died August 11, aged 58, of heart disease.

Hugh C. Chance ⊕ Cumberland Gap, Tenn.; University of Tennessee Medical Department, Nashville, 1893; member of the Kentucky State Medical Association and the Radiological Society of North America; died August 14, aged 76.

John Ralph Cooper, Engadine, Mich.; Kentucky School of Medicine, Louisville, 1903; member of the Kentucky State Medical Association and the American Medical Association; past president of the Boyd County (Ky.) Medical Society; died in Petoskey in August, aged 67.

Martha Louise Pomeroy Sanderson Cottrell, Walled Lake, Mich.; College of Medical Evangelists, Los Angeles, 1922; member of the American Medical Association; died in July, aged 52.

Joseph Marvin Feder ⊕ Lake City, Fla.; Kansas City (Mo.) College of Medicine and Surgery, 1920; served during World War I; life honorary member of Anderson County Memorial Hospital in Anderson, S. C.; chief of pathology, the Veterans Administration Hospital; died August 25, aged 57.

Franklin Ernest Hall ⊕ Chicago; Karl-Franzens-Universität Medizinische Fakultät, Graz, Germany, 1919; specialist certified by the American Board of Surgery; affiliated with the Henrotin and Grant hospitals; died October 4, aged 54.

Harold Alonzo Hume ⊕ Owosso, Mich.; Detroit College of Medicine, 1909; fellow of the American College of Surgeons; member of the American Association of Industrial Physicians and Surgeons; on the staff of the Memorial Hospital; died August 18, aged 64, of coronary occlusion.

Kromer Columbus Ice, La Habra, Calif.; St. Louis College of Physicians and Surgeons, 1903; served during World War I; died August 26, aged 73, of heart disease, following an operation for gallstones.

John William Ildza, Pittsburgh; Medico-Chirurgical College of Philadelphia, 1915; Temple University School of Medicine, Philadelphia, 1918; member of the American Medical Association; affiliated with Suburban General Hospital in Bellevue and St. Johns General Hospital; died August 27, aged 71, of coronary occlusion.

John G. Jennette, Pauls Valley, Okla.; Memphis (Tenn.) Hospital Medical College, 1888; died in Terrell, Texas, July 19, aged 92, of senility.

Rudolph Frey Patton ⊕ Des Moines; State University of Iowa College of Medicine, Iowa City, 1926; affiliated with the Veterans Administration Center; died August 24, aged 47.

James William Proctor, Tenafly, N. J.; University of the City of New York Medical Department, 1888; member of the American Medical Association; fellow of the American College of Surgeons; past president of the Bergen County Medical Society; served on the Englewood (N. J.) Hospital; died August 26, aged 86, of arteriosclerotic heart disease.

Henry Ashton Robinson, Hingham, Mass.; Harvard Medical School, Boston, 1911; member of the American Medical Association; served during World War I; member of the New England Pediatric Society; for many years school physician; died August 21, aged 62, of acute coronary occlusion.

Ralph William Schaeffer, Redondo Beach, Calif.; Cornell University Medical College, New York, 1921; member of the American Medical Association; fellow of the International College of Surgeons; affiliated with the Jared Sidney Torrance Memorial Hospital, Torrance; died August 3, aged 59, of sarcoma.

John Arthur Spengler, Geneva, N. Y.; University of Buffalo School of Medicine, 1899; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the American Medical Association; fellow of the American College of Surgeons; affiliated with the Geneva General Hospital; ophthalmologist for the Lehigh Valley and New York Central Railroads; died August 12, aged 81, of cerebral hemorrhage.

John Walter Torbett Sr., ⊕ Marlin, Texas; Atlanta Medical College, 1895; specialist certified by the American Board of Internal Medicine; life member of the American College of Physicians; affiliated with the Torbett Clinic and Hospital; for many years chairman of the board of directors of the Methodist Orphans Home, Waco; a director of the Marlin National Bank; died August 9, aged 78, of coronary occlusion.

Robert T. Upchurch, Henderson, N. C.; Jefferson Medical College of Philadelphia, 1908; member of the American Medical Association; for many years active member of the Vance County Board of Health and at one time county health officer; medical director of the Maria Parham Hospital; died August 4, aged 68, of dissecting abdominal aneurysm.

Henry Harrison Vaupell, Oak Park, Ill.; Rush Medical College, Chicago, 1897; College of Medicine and Surgery (Physio-Medical) Chicago, 1905; died August 30, aged 73, of coronary occlusion.

William Joseph Walsh Jr., ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1927; on the staff of St. Mary's Hospital, where he died August 12, aged 46, of brain tumor.

John Malcolm Weber, Philadelphia; Jefferson Medical College of Philadelphia, 1917; served during World War I; died in Lankenau Hospital August 16, aged 58, of adenocarcinoma of stomach.

Abraham Joseph Weinberg ⊕ Chicago; Rush Medical College, Chicago, 1920; certified by the National Board of Medical Examiners; served during World War I; died in the Belmont Community Hospital August 7, aged 53, of melanosarcoma of the jaw with metastasis to the liver and lungs.

Edward Bates Wren, Talladega, Ala.; Medical College of Alabama, Mobile, 1890; member of the American Medical Association; formerly member of the city commission and county board of health; on the staff of Citizens' Hospital; died August 12, aged 87, of Parkinson's disease.

⊕ Indicates "Fellow" of the American Medical Association.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Sept. 20, 1949.

International Anticancer Union

The general meeting of the Board of Directors of the International Anticancer Union took place in Paris July 18 to 22. Delegates of thirty-six nations were present. Prof. J. Maisin, secretary-general, and Professor Le Lorier, assistant secretary-general, read reports on the activity of the union and presented future plans. After discussion, the general meeting passed resolutions relating to modification of the Union statutes, universally standard statistics, constitution of continental standardized iconography, constitution of a standard nomenclature (lexicon), organization of "cancer week" and issuance of a postal stamp, other financial propaganda resources, coordination of efforts within the scope of the research and social fight against cancer, help for the anticancer equipment of devastated countries, creation of continental or regional union offices, and issuance of a bulletin insuring rapid and periodic transmission of information of universal interest. The program of the Fifth International Congress for the Scientific Research and Social Fight Against Cancer, which is to take place in Paris in 1950, has been discussed, and the agenda will be published later. Jointly with this general meeting there took place the meeting of the International Cancer Research Commission, which became a part of the International Anticancer Union, according to decisions made at the Fourth St. Louis International Congress, of 1947. This commission is now the Scientific Council of the Union. At one of its last meetings, the following resolution was passed: "The duties of the International Research Commission are to advance research on cancer by (1) serving as the Scientific Council of the Union; (2) pooling information at annual meetings and on specific topics at special small meetings; (3) obtaining agreement on cancer nomenclature through the publication of atlases and other means; (4) giving advice in the planning of cancer research when asked; (5) helping secure equipment and supplies when asked; (6) promoting studies on the environmental, occupational and geographic incidence of cancer, especially as initiated through cooperation of the members; (7) maintaining a registry of cancer research institutions, equipment and workers, and (8) facilitating adequate review of the cancer literature."

The next meeting of the Board of Directors and of the Scientific Council of the International Anticancer Union will take place at the fifth congress, in 1950.

Heparin Therapy of Acute Articular Rheumatism and Exudative Processes

E. Donzelot, H. Kaufmann, E. Chartrain and J. Nory in March (Broussais Hospital) reported an acute articular rheumatism improved in a spectacular manner with heparin therapy. The patient was a 25 year old woman suffering for two months from a rheumatismal bout with a temperature ranging between 38 C. and 39 C. (100.4 and 102.2 F.) and with intense generalized arthralgia. After failure with the usual therapy, the authors tried an intravenous perfusion of 1 liter of isotonic sodium chloride solution with 150 mg. of heparin for three days (the coagulation time remaining 9 minutes). On the fourth and fifth days 300 mg. of heparin were injected (the coagulation time rose to 23 and 33 minutes). Pains (that had increased at the start) disappeared when the dose of 300 mg. per day was attained. The patients, immobilized the previous day by arthralgia, awakened free of symptoms. The temperature fell to 37 C. (98.6 F.) on the fourth day. Since then Donzelot and Kaufmann have treated 2 additional patients with similar success. One patient suffering from articular rheumatism for two months, responded to the administration of heparin with prompt disappearance of the arthralgia, and later of the fever. The other patient had malignant rheumatismal pancarditis, with bilateral hydrarthrosis and temperature rising above 39 C. (102 F.). There was a pericardial friction sound of exceptional extension and intensity; roentgenography showed an increase of the dimensions of the heart and pronounced pulmonary stasis. The patient was in a deep torpor, and the disease seemed to have reached the terminal phase. The intravenous perfusion of heparin caused the disappearance of pains on the following day; torpor diminished after three days, the temperature fell to 37.5 C. (101.3 F.), and within forty-eight hours the signs of pericarditis disappeared, the radiologic image of the heart regressed and the pulmonary overcharge disappeared. Four days after the institution of perfusion the appetite had returned and hydrarthrosis was resorbed. These symptoms reappeared to lesser degree after the discontinuation of the treatment, but were definitely halted by the third perfusion. The authors believe that the action of heparin on pericardiac and articular exudates and on torpor and arthralgia are due to a single mechanism acting on the protein balance through a modification of osmosis. With this method, the authors have controlled the action of heparin in other exudative processes. For example, in a case of tuberculous acute serofibrinous pleurisy, heparin was given in discontinuous intravenous injections of 300 mg. (three injections of 100 mg. per twenty-four hours). Dyspnea was almost immediately alleviated, and the discharge rapidly resorbed during the following days. At the July 8 meeting of the Medical Society of the Paris hospitals, Donzelot and Kaufmann stressed that heparin can be considered a weapon for the treatment of acute articular rheumatism and that as regards other exudative processes its action deserves further study.

Researches for the Increasing of Immunity

G. Ramon, R. Richou, J. P. Thiery and C. Gerbeaux have made a comparative study of the influence of various substances stimulating the increase of immunity by injecting in rabbits purified tetanus antitoxin alone or with a mixture of suspensions of Bacterium abortus, transformed with a solution of formaldehyde in wood alcohol and water and with heat in a vaccine or with latex or alum. After the first injection, the value of antitoxic immunity corresponded to 1/100 unit when anatoxin was used alone and to ½ and ⅓ unit with a mixture of latex or alum, but, when anavaccines of Bact. abortus were added, this value reached ½, 1 and 3 units. Adding a bacterial suspension stimulates, therefore, an increase in immunity, which reaches a level almost 1,000 times higher than the level obtained with anatoxin alone. This addition offers the advantage of bringing about by itself a specific immunity. In their communication to the Academy of Sciences, the authors emphasized that, in addition to their practical value, these researches permit the study of the phenomena that influence the degree of immunity; they are pursuing their research particularly on the constitution of microbes and the responsibility for the increase.

Crystallized Clitocybine

Prof. A. Ch. Hollande (Montpellier), who discovered the effect of clitocybine on Bacillus tuberculosis, reported to the Academy of Sciences on May 30, 1949, that he had succeeded in extracting, by means of various solvents, pure clitocybine from Clitocybe gigantea and its culture mycelium and to have crystallized it. The crystals, which are of various forms, are soluble in water, sulfuric ether and ethyl alcohol; in the presence of moisture they oxidize readily, becoming ochreous in color. With respect to B. tuberculosis, clitocybine crystals in aqueous solution are bacteriostatic and bacteriolytic, these properties disappearing when the solution is heated to 100 C. Some crystals, when placed on the surface of a Petri dish containing a forty-eight hour opalescent culture of human tuberculous bacilli, effect in twenty-four to forty-eight hours, at 37 C., a clear aureola, a sign of bacteriolysis. The author stresses that crystallized clitocybine is not toxic; the subcutaneous injection of 0.02 Gm. aqueous solution to a 350 Gm. guinea pig does not cause local necrosis or the death of the animal. Clitocybine is not a protein; its chemical nature is being studied.

Influence of the Teeth on the Evolution of Certain Endocrine Disorders

During roentgenographic examinations of the skull in certain endocrine disorders, especially those with hypophyseal or thyroid disorders, J. A. Huet noted the frequency of morphologic modifications of the teeth and has undertaken systematic research on all such patients. At a meeting of the Medico-Surgical Society of Private Hospitals, he presented a series of roentgenograms showing the coincidence of disorders of dental migration, especially of the superior wisdom tooth, with endocrine disorders. The author pointed also to the existence of infectious lesions of dental origin in a large number of cases of infectious thyroiditis. He recommended systematic roentgenographic study of the skull of all patients with endocrine disorders of thyroid or hypophyseal origin, and referring the patients to a dental surgeon if they failed to respond to endocrine therapy.

New Treatment of Masculine Seborrheal Alopecia

Sabouraud emphasized the influence of sex hormones in alopecia seborrheica but probably overestimated the microbial factor. He stated that the condition does not occur in eunuchs and that the usual onset is in young men with full sex function; the baldness is the sign of a superabundance of male hormones. The disease is moderate in women, ceases during pregnancy (accompanied with hyperfolliculinemia) and reappears within three months after delivery.

COLOMBIA

(From Our Regular Correspondent)

Sept. 30, 1949.

Social Insurance

A system of social insurance was recently established in Colombia for the first time. It is in charge of the Instituto Colombiano de Seguros Sociales, which was opened in Bogotá on September 26. The social insurance will cover the expenses of nonoccupational diseases and of maternity. The Colombian medical profession, because of experience in other Latin American countries, moved in professional solidarity to preserve their individual freedom. This professional movement resulted in the acceptance of an agreement between the Board of Directors of the Institute of Social Insurance and the presidents of the Medical Federation of Colombia and of the various scientific societies of Bogotá. The agreement is of great value in adjusting the aims of the medical profession to the problems created by social insurance. This accomplishment has not yet been secured by professionals in some other countries.

The main points in the agreement are: 1. Specialists are not employees of social insurance service, but are registered as doctors in accordance with the listing by several scientific and medical associations and societies. The patients are to be sent to their proper offices. 2. Specialists are divided into two classes: (*a*) those appointed to social insurance services and (*b*) those who are not and who compose the supernumerary group. The specialists appointed to the social insurance services will accept the minimal fees for operations they perform, as the fees will be determined by the institute. Supernumerary specialists do not give their services under these conditions. They act as a moral and scientific support for those who are appointed. The classification is to be made by the respective scientific society. Insured patients are free to select the surgeon they want for operations, who will be paid by the Institute of Insurance, according to its schedule of fees, the balance to be paid by the patient. 3. The patient is free to select the physician he wants, either appointed or supernumerary. 4. Surgeons and obstetricians are limited to a certain maximum number of operations every month, to prevent excessive work for a given group. 5. There will be general physicians for consultations, who will work as employees of the institute with a fixed salary, based on two hours of work a day. The directors of the institute will select doctors from the lists given them by scientific associations. Consultations will not exceed three per hour for each physician. Consultant physicians will not appear in the lists of specialists, either appointed or supernumerary. 6. The medical profession petitioned the Congress to restrict medical care under social insurance to persons in poor economic circumstances. The medical body of Bogotá was solidly united in petitioning for the aforementioned agreement. The social insurance program, which covers 55,000 insured persons in the capital of the republic, began its services with 60 physicians.

Human Infection with Trypanosoma Rangeli

Drs. Raúl Paredes Manrique and Cecilia Hernández de Paredes of the Department of Clinical Laboratory reported a case of infestation with Trypanosoma rangeli before the Academia Nacional de Medicina. This is the first case reported in a human being in Colombia and the second mentioned in the literature. The first case in the literature was reported by Dr. Felix Pifano of Venezuela. The patient, 35 years of age, complained of occasional recurrent fever. He had hepatomegaly, splenomegaly, anemia, transient malleolar edema, insomnia and acute osteomuscular pain. The results of laboratory examination showed accelerated sedimentation of the erythrocytes, leukocytosis and lymphocytosis. Clinical cure was obtained after administration of chloroquine diphosphate. The disease lasted from Nov. 1, 1947 to Sept. 13, 1948.

Trypanosoma rangeli tejera was isolated from the blood of the patient. The presence of flagella in the blood was verified by blood cultures. The results were positive even after clinical improvement. The cultures became sterile after the patient was given antimony preparations.

The authors conducted experimental studies of Trypanosoma organisms by use of cultures, xenodiagnoses and inoculations. Leishmania, Leptomona and Crithidia were not encountered in the blood and viscera of the experimental animals, but all forms of Trypanosoma flagella were encountered in the cultures and xenodiagnoses.

The pathogenetic role of Tr. rangeli in the case reported by the authors seem to have been proved by the fact that no other infection was present and by the positive results obtained from experimental inoculation in several animals, although the disease could not be reproduced.

Institution of Mental Hygiene

Dr. Pierre C. Simonart of the University of Pennsylvania was recently invited to lecture at the universities of Colombia. He gave a short course on physiopathology of emotion at the Universidad de los Andes, which was recently opened, and also several lectures in the universities and academies of Bogotá. Much enthusiasm on the subject of mental hygiene resulted from these lectures among scientific and social circles. An Institute of Mental Hygiene will be established with the collaboration of the Universidad de los Andes and the Neuropsychiatric Institute of Pennsylvania and with donations from the Colombian philanthropists. Donations in one week reached 150,000 Colombian pesos.

Correspondence

TOXIC EFFECTS OF ESTROGENS

To the Editor:—J. A., a white man aged 29, was referred to me by a chemical concern for a painful enlargement of the right breast. I noted, also, a beginning enlargement and congestion of the left breast. These symptoms had been present for the past month and had been getting worse. Other symptoms were: dryness of the mouth, diminished growth of facial hair, requiring less frequent shaving, and itching of the back of the neck and chest. The patient had been working with synthetic estrogens for the previous five months, handling the material during one of the stages of manufacture. The physical examination revealed an enlargement of the right breast with a pancake mass under the nipple; there was also a slight enlargement of the left breast. Both nipples showed deep pigmentation, unusual in the male. There was no disturbance in sex function. The patient is the father of two small children. A diagnosis of percutaneous estrogen absorption was made. The patient was removed from contact with estrogen compounds, and testosterone propionate, 25 mg. twice weekly, was administered for three weeks. At the end of the three weeks all the aforementioned symptoms disappeared. The right breast shrank to normal, but a small pancake mass was still felt in the left breast. The pigmentation of the nipples lessened considerably. The normal growth of facial hair returned, and the dryness and itching of the skin disappeared. Although no estrogen assay was made, the pathogenesis of the condition was well established by the history of contact and by the recovery as soon as the contact with estrogenic material had ceased.

Rita S. Finkler, M.D., Newark, N. J.

PSYCHOSOMATIC SYMPTOMS

To the Editor:—A. I. Josey describes in his article "Headache Associated with Pathologic Changes in Cervical Part of Spine" (J. A. M. A. 140:944 [July 16] 1949) what appears to be a new syndrome. However, as is the case many syndromes which attempt to unite structures of the same composition (muscles, skin and the like) but unrelated to each other as far as their innervation is concerned and in which no apparent cause can be discovered, one often finds after a careful psychiatric history an emotional maladjustment with somatic conversions.

The physiologic basis for the loss of lordosis in the cervical part of the spine is accounted for by a tonic contraction of certain posterior neck muscles (splenii capitis, cervicalis ascendens, semispinalis colli, supraspinalis and interspinalis). This tonic contraction is usually associated with similar changes in the occipitofrontalis, the masticatory and the lower portion of erector spinae muscles. The somatic symptoms presented by such patients are obvious: cervical and frontal pain and low backache. These muscular aches are readily found in compulsion neurosis and to some extent in psychasthenia. Psychologically they represent the patient's vain attempt to keep "his head above water," "to keep his chin up or a stiff upper lip" or "to grit his teeth in the face of insurmountable difficulties."

These patients can be characterized as stiff personalities, unbending and uncompromising. Typical is the picture of the patient sitting erect on the edge of the examining chair, the palms of his hands resting on his thighs and the chin up with an attitude of defiance. He has lost faith in medicine after many years of suffering and innumerable treatments, yet he keeps on returning in the hope that a new miracle drug will relieve his pain. A thorough psychiatric history will not only reveal the conflict but enable the patient to unburden himself of the unpleasant material.

A. D. Jonas, M.D., New York.

PERIODIC DISEASE

To the Editor:—Reimann's paper on "Periodic Disease" in The Journal, Sept. 17, 1949, suggests relationships among conditions previously described as distinct entities. In support of this concept, I should like to cite my own experience in 16 cases of benign paroxysmal peritonitis. Three patients had intermittent arthralgia, at times with joint swelling, as an alternative form of attack appearing between their major abdominal crises. Two patients had urticaria, although only in the earlier years of their illness. One patient had on rare occasions an episode of fever without abdominal pain. In none of the 16 cases was there purpura, angioneurotic edema, periodic paralysis or neutropenia.

I am not in accord with Reimann's designation of benign paroxysmal peritonitis as "periodic abdominalgia." This term, which signifies merely recurrent abdominal pain, does not in any sense describe the remarkable clinical picture of the paroxysms of the disease. They are characterized not only by intense abdominal pain, fever, chills, leukocytosis and polymorphonucleosis but also by the presence of striking abdominal findings indicative of peritoneal irritation. The direct and rebound tenderness and the abdominal wall spasm are often of such degree as to invite emergency operation. These findings taken together set this disease sharply apart from the commoner, milder, functional forms of abdominal pain.

With respect to the term "peritonitis," with which Reimann appears to be in disagreement, in addition to the hyperemia and edema of the peritoneum which were noted in my first paper, there may be actual peritoneal fluid or exudate present. In 1 case, which I reported more recently, there were "scattered deposits of fibrin-like material" (Benign Paroxysmal Peritonitis, *Gastroenterology* 12:234 [Feb.] 1949). In 1 case, as yet unreported, stringy fibrinous exudate was present in the peritoneal cavity. Microscopic examination of the peritoneum and omentum revealed acute purulent inflammation. Cultures were sterile, and results of complete exploration were otherwise negative. In Reimann's own series, 1 patient (case 10) was found at operation to have "peritoneal adhesions and free peritoneal fluid, suggesting a chronic form of peritonitis." In my opinion, the vascular responses and the polymorphonuclear exudate together comprise an inflammatory reaction of the peritoneum which justifies the term peritonitis.

Reimann's observations should emphasize the fact that fever may occur in the absence of infection. Perhaps even more important, they should attract medical attention to a group of disabling paroxysmal disorders which can last a lifetime.

Sheppard Siegal, M.D., New York.

FOREIGN BODY IN BREAST

To the Editor:—The clinical note, "Foreign Body in Breast," in The Journal, Sept. 10, 1949, reminds me of a case in my practice many years ago. The patient, age about 65, mother of several children, called me to her home because of an abscess in her right breast which was pointing about 1 inch (2.5 cm.) below the nipple. The breast was large and flabby. The induration was not over ½ inch (1 cm.) in diameter but extended deep into the breast. There were no enlarged nodes in either breast or in the axillary spaces. When the bistoury entered the abscess a hard object was felt, and, after the pus was evacuated, a forceps was introduced and a needle 1¼ inches (3 cm.) long was extracted point foremost. The patient denied ever having had a needle pierce her breast but did say that many years previously she swallowed a needle about this size.

J. M. Postelle, M.D., Oklahoma City.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Part III.* Boston, Chicago and New York, January. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Written and Reviews of Case Histories. Part I.* Various Centers. Feb. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec., Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S Michigan Ave., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec. Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Proctology: *Examination in Anorectal Surgery.* Philadelphia, Nov. 12. Sec.-Gen., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Colorado: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Connecticut: * *Examination.* Hartford, Nov. 8-9. Secretary to the Board, Dr. Creighton Barker, 160 St. Ronan Street, New Haven. *Homeopathic.* Derby, Nov. 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

District of Columbia: * *Examination.* Washington, Nov. 14-15 Sec. Mr. Paul C. Foley, Admin. Asst., 4130 E. Municipal Bldg., Washington.

Florida: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Hawaii: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maine: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State Street, Portland.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Massachusetts: Boston, Nov. 15-18. Sec., Dr. George L. Schadt, 413 East State House, Boston.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: * *Examination.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Medical Motion Pictures

FILM REVIEWS

Journey into Medicine. 16 mm., black and white, sound, 1,400 feet (1 reel), showing time thirty-eight minutes. Produced in 1947 by Affiliated Films for the United States Department of State for use in its international information program abroad. Procurable on loan from Federal Security Agency, Washington 25, D. C., and regional offices or procurable on purchase from Castle Films, 1445 Park Avenue, New York 29, by the following groups and individuals without prior authorization: American Medical Association, American Dental Association, American Hospital Association, state and local organizations affiliated with these associations, physicians and dentists, accredited schools of medicine, accredited schools of public health, public health officials and United States government agencies. Individuals or organizations not falling within the groups named should apply to the United States Public Health Service for purchase authorization.

This is a documentary film originally produced for the purpose of giving people in foreign countries a better understanding of medical and public health education in the United States.

It depicts the experience and thoughts of a student from a small up-state college, taking his medical course at the Columbia-Presbyterian Medical Center, his internship at the New York Hospital (Cornell Center), his course in pediatrics followed by a hygiene and public health course at Johns Hopkins School of Medicine and some practical epidemiologic work in Baltimore.

In viewing the film, one might be left with the impression that the medical course is shorter and much freer of routine than it actually is. It is regrettable that the important subject of anatomy and dissection and physiology and laboratory work with animals were not mentioned; however, the preparatory course of a public health physician is fairly and adequately portrayed.

The film can be used as a recruitment aid to assist high school and college students in making their choice of vocation or as a vocational guidance for undergraduate medical students to stimulate interest in public health education.

The photography, direction and narration are excellent.

Meeting Emotional Needs in Childhood. The Groundwork of Democracy. 16 mm., black and white, sound, 1,200 feet (1 reel), showing time thirty-three minutes. Produced in 1947 by the Department of Child Study, Vassar College as one of a series of films in Studies of Normal Personality Development. Procurable on rental or purchase from the New York University Film Library, 26 Washington Place, New York 3.

This film shows child development, particularly the evolution of the personality as the result of personal relations, especially with persons in the home. It points out certain home relations which might lead to unsocial activities in later childhood and portrays how good social attitudes can be developed through carefully adjusted parent-child relationship. An effort is made to illustrate how children can be helped to feel secure and increasingly independent. Their attitudes in the classrooms, the playground and their association with others are well demonstrated. The approach which teachers may take in handling these problems in the schoolroom and suggestions for parent understanding are brought out.

This motion picture is a plea for parent understanding of the effects of early family experiences on later emotional and social development. It should be applicable to parent-teachers associations, parents' study groups, teachers, nurses, social workers and other professional groups who work with children. Technically, it leaves much to be desired. It is not well organized, and the photography is rather poor. However, it may be the best film on this subject available at this time.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Drunkenness: Scientific Recognition of Chemical Tests for Intoxication.—The defendant was convicted of negligent homicide and appealed to the Supreme Court of Michigan.

The defendant contended that the trial court had erred in admitting into evidence testimony concerning the results of a test voluntarily taken by him on a "Harger drunkometer" and deductions drawn therefrom as to his having been under the influence of intoxicating liquor at the time of the accident.

It was the contention of the prosecution that it is generally accepted by medical authorities (1) that a chemical analysis of a specimen of blood, urine or other body fluid will accurately disclose the percentage of alcohol contained in the blood, and (2) that when the blood alcohol concentrate of a subject is 0.15 per cent or more, by weight, he is under the influence of intoxicating liquor to the extent of impairment of his ability to drive an automobile. On the basis of such general acceptance by the medical profession it has been held that evidence of the taking of such specimen at or near the time in question, of its chemical analysis and of the alcoholic content of the blood as determined by such analysis, together with expert opinion testimony as to what the presence of such alcoholic content in the blood indicates with respect to the subject's intoxication or sobriety, are admissible.

The question for determination on this appeal, said the Supreme Court, is "Is there general scientific recognition that the breath test applied by the Harger 'drunkometer' will afford an accurate index of the alcoholic content of the blood?" Two policemen, both trained in chemistry, one of whom studied the "drunkometer" for a month under the inventor and then instructed the other with respect thereto, and a doctor, who had worked as a student assistant to the inventor, Harger, gave complex explanations of the underlying theory and modus operandi of the device and testified for the prosecution that, in their opinion, the instrument produces accurate results as to the alcoholic content of the blood. To the same effect is an article by Harger and associates, "A Rapid Chemical Test for Intoxication Employing Breath," appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (110:779 [March 12] 1938). Against this was the testimony of five doctors sworn for the defense, one of whom testified that "what is going on in this test is that you have got a continuous series of errors, some for and some against, so that the thing works like a slot machine," and another of whom testified that most of the medical profession do not regard the instrument reliable. Their views find direct support in a report appearing in the *Journal of Laboratory and Clinical Medicine* (26:1527 [June] 1941) by Dr. Haggard, professor of physiology and director of the Alcohol Institute at Yale University, and others and, indirectly, in other medical and scientific reports and articles. Under the state of the record there would seem to be applicable here, said the Supreme Court of Michigan, what the Supreme Court of Wisconsin said concerning the so-called lie-detector test:

> "The present necessity for elaborate exposition of its theory and demonstration of its practical working, in order to convince the jury of its probative tendencies, together with the possibility of attacks upon the soundness of its underlying theory and its practical usefulness, may easily result in a trial of the lie detector rather than the issues in the cause."

There is no testimony in the record, the Supreme Court of Michigan continued, that there is general acceptance by the medical profession or general scientific recognition of the results of a Harger "drunkometer" test as accurately establishing the alcoholic content of a subject's blood and thus the extent of his intoxication. Accordingly, the admission in evidence of testimony concerning the "drunkometer" and the results of the test thereby imposed on the defendant was error, the conviction was reversed and a new trial ordered.—*People v. Morse, 38 N. W. (2d) 322 (Mich., 1949).*

Drunkenness: Admissibility in Evidence of Results of Chemical Test.—The defendant was convicted on a charge of driving on a public highway while intoxicated and from such conviction he appealed to the court of criminal appeals of Texas.

The prosecution rested its case on the evidence of the arresting officers and the expert testimony of a doctor as to the results of a test made by the officer of the alcoholic content of the defendant's breath. This evidence was based on a showing made by forcing the breath of the defendant, by a process thoroughly described, through a machine designated the "Harger breathometer." The evidence contained a description of this machine and the nature of the test made through it, together with the doctor's opinion of the result of the test.

The defendant had signed an agreement for this test which, though it did not relate to the particular instrument described, provided ". . . do freely and voluntarily request that a test for alcohol be given me, and further state that the result of such test may be used in evidence against me on my trial for the offense concerning which such alcohol test is herein made." Pursuant to this agreement the test referred to was made. The officer having charge of it testified as to the process involved and the result of his finding and the doctor then commented, giving his opinion as to the intoxication of the defendant based on such alcoholic content.

In the defendant's brief appeared the following statement: "There was a further objection based on the theory that if the defendant was drunk he could not give his consent but appellant, through counsel, waives this position as not being particularly well taken and the law is well settled on this point." In view of the defendant's agreement that the test be made and that the evidence be introduced, said the court of appeals, the same was properly before the trial court for such consideration as he saw fit to give it as a circumstance. The evidence of the arresting officers amply justified the court's action in finding the defendant guilty. Since the evidence of the physician was admitted without any valid objection, we are not to be understood as holding, the court continued, that the evidence of the result of the test would be admissible over proper objection. That question is not before us. Accordingly, the defendant's conviction was sustained.—*Guenther v. State, 221 S. W. (2d) 781 (Texas, 1949).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

49:247-390 (May) 1949. **Partial Index**

Distribution of Rats in Baltimore, Maryland. D. E. Davis and W. T. Fales.—p. 247.
Experimental Studies on Role of Filth Flies in Transmission of Endamoeba Histolytica. A. C. Pipkin.—p. 255.
Vesical Schistosomiasis in the Middle East with Report of Two New Foci in Northern Syria. A. C. Pipkin and E. Rizk.—p. 276.
Control of Anopheles Pseudopunctipennis in Mexico with DDT Residual Sprays Applied in Buildings. Part II. J. B. Gahan, W. G. Downs and H. Celiss.—p. 285.
Schistosome Dermatitis, a Sensitization Phenomenon. L. Oliver.—p. 290.
Antibody Response of Rabbits to Rickettsial Vaccines in Water-in-Oil Emulsion. J. P. Fox.—p. 303.
Relative Infectability of Laboratory Animals and Chick Embryos with Rickettsiae of Murine or of Epidemic Typhus. J. P. Fox.—p. 313.
Antibody Response to Vaccination Against Murine Typhus. J. P. Fox, E. R. Rickard, J. van der Scheer and H. R. Cox.—p. 321.
Effect of Typhus Vaccine on Numbers of Rickettsiae in Body Lice of Typhus Patients. J. C. Snyder, E. S. Murray, A. Yeomans and others.—p. 340.
Studies in Human Malaria. D. S. Ruhe, W. C. Cooper, G. R. Coatney and E. S. Josephson.—p. 346.

Archives of Otolaryngology, Chicago

49:447-574 (May) 1949

Functioning of Air Cell System of Mastoid Process in Audition. P. G. Macdonald.—p. 447.
Antral Window in the Middle Meatus: Experiments and Presentation of Cases in Which Antral Window Was Made in the Middle Meatus of Human Subject and No Additional Surgical Procedures Were Performed. W. W. Wilkerson Jr.—p. 463.
Symptomatic Elongated Styloid Process: Report of Two Cases of Styloid Process—Carotid Artery Syndrome with Operation. W. W. Eagle.—p. 490.
*Radiation Therapy for Conductive Deafness: Report of Results and Discussion of Roentgen and Radium Irradiation. H. C. Rosenberger.—p. 504.
*Hearing Reeducation Without Use of Hearing Aids: Report, Analysis and Interpretation of Results in Fifty Hard of Hearing Patients. V. L. Browd.—p. 511.
Is it Possible to Cover the Fenestra Nov-Ovalis with Shrapnell's Membrane? Anatomic Study. S. Rosen.—p. 529.
Hemangioma of the Ear and Mastoid Process: Report of Two Cases. M. V. Miller.—p. 535.
Clinical and Pathologic Aural Findings in Case of Carcinomatosis of the Meninges. E. Grabscheid.—p. 547.
Squamositis, Mastoiditis and Squamomastoiditis. D. A. DeLisa.—p. 558.

Radiation for Deafness.—Rosenberger treated 13 boys and 8 girls between the ages of 2½ and 14 years by roentgen irradiation of the nasopharynx for diminished hearing of conductive type thought to be caused by tubal blockage of lymphoid origin. The tonsils and the adenoids had been previously removed in every instance. The typical patient was one who had recurring colds, frequently associated with differing combinations of otalgia, stuffiness of the ears, tinnitus and variable hearing. In some instances the patient had had one or more attacks of suppurative otitis media. The patient was showing little if any improvement following standard otologic treatment. Of the 21 patients whose nasopharyngeal tissues were irradiated, only 7 showed significant improvement of hearing, but in several of these the gain amounted to as much as 30 decibels in the critical frequencies. In practicing roentgen rather than radium radiation, both of which may be administered effectively, the author was influenced by the advantage of a larger field covered by the exposure, which lessens the possibility of misapplication or misdirection of radiant energy. Each patient had a total of four treatments, and in no instance were subsequent treatments given. It is possible that additional treatments might have increased the percentage of favorable results. One disappointing feature was the recurrence of aural symptoms and of depression of hearing with subsequent colds, although in several patients the incidence of colds seemed lessened.

Hearing Reeducation Without Hearing Aids.—Browd treated 46 consecutive, unselected patients between the ages of 20 and 57, applying for the relief of a troublesome and noticeable auditory impairment of an average duration of twelve years, by auditory reeducation without the use of a hearing aid. The patients showed a hearing loss of 20 decibels or more in the better ear. Interpretation of sounds and discrimination of sounds are important features of reeducation of hearing, and, since speech is the most important and most frequently heard of the day's sound, speech is the principal vehicle employed and its interpretation one of the first steps in the therapy. Seated face to face with the patient at a distance at which a conversational tone of voice can just be comfortably heard by him, the speaker delivers simple statements concerning a single topic at conversational loudness. The patient is asked to repeat whatever he hears, and if he is correct he is so informed. This is continued for several minutes. When possible this procedure is repeated daily thereafter. Further improvement of the understanding of speech is subsequently conferred by correcting misinterpreted speech. The patient is given many opportunities of identifying at close range the inadequate sound pattern he receives with bells, buzzers, whistles, ticking of the clock, rapping on doors and other sounds encountered by the patient in his office, shop or occupation. As he becomes familiar with the sounds and demonstrates his ability to recognize them, they are presented to him from increasingly greater distances. The approach is the same for all patients, but individual variations are the rule. None of the work is done in groups. Treatment continues as long as progress is observed, generally for three to six months. Only 9 of the author's patients continued to have either a disabling or a noticeable degree of impairment. The remaining 37 showed either no disability or only occasional evidence of it. None of the latter group has reported a regression of hearing, and 5 had maintained their improvement for three years. Patients with a 20 to 35 decibel loss in the better ear can tolerate a hearing aid in few situations in the course of the day. On that account, they have in the past been forced to remain hard of hearing, although numerically they constitute an appreciable portion of the hard of hearing group. When given auditory reeducation alone, few of them fail to attain a satisfactory level of hearing.

Connecticut State Medical Journal, Hartford

13:515-616 (June) 1949

Rheumatic Heart Disease in Seventh and Eighth Grade Connecticut School Children: Study in Differential Prevalence. R. W. Quinn, J. H. Watkins and Julia P. Quinn.—p. 515.
Loss of Consciousness and Convulsions in Middle-Aged Patients. P. I. Yakovlev.—p. 521.
Treatment and Management of Congestive Heart Failure. I. S. Eskwith.—p. 527.
Old Age. J. A. Wilson.—p. 531.
Active Immunization in Private Practice. J. E. Gordon.—p. 533.
Licensing of Foreign Medical Graduates in the United States. C. Barker and Grace Mooney.—p. 542.

Endocrinology, Springfield, Ill.

44:391-486 (May) 1949. **Partial Index**

Altered Glucose Tolerance with Histologically Normal Islets Following Repeated Small Doses of Alloxan. D. W. Molander and A. Kirschbaum.—p. 391.
Insulin Hypersensitivity Following Administration of Desoxycorticosterone Acetate. Chi-Ping Cheng and G. Sayers.—p. 400.
New Procedure for Determination of Antidiuretic Principle in Urine. A. Grollman and Betty Woods.—p. 409.
Antidiuretic Hormone in Urine in Experimental and Clinical Hypertension. M. E. Ellis and A. Grollman.—p. 415.
Influence of Ascorbic Acid on Adrenal Weight During Exposure to Cold. L. P. Dugal and M. Thérien.—p. 420.
Action of Testosterone on Adrenal Cortex of Hypophysectomized, Prepuberally Castrated Male Mouse. I. C. Jones.—p. 427.
Concentration of Adrenocorticotrophic Hormone in Rat, Procaine and Human Pituitary Tissue. T. W. Burns, M. Merkin, M. A. Sayers and G. Sayers.—p. 439.
Physiologic Activities of Stereoisomers of Thyroxine. W. E. Griesbach, T. H. Kennedy and H. D. Purves.—p. 445.
Influence of Thyroxine on Protein Metabolism. J. Rupp, K. E. Paschkis and A. Cantarow.—p. 449.
Studies on Nature of Protein Catabolic Response to Adrenal Cortical Extract. F. L. Engel, Sara Schiller and E. Irene Pentz.—p. 458.

Gastroenterology, Baltimore

12:721-918 (May) 1949

Report of Recent Medical Journey Through Europe. A. M. Snell.—p. 721.
*Recurrence of Peptic Ulcer in Man as Affected by Treatment with Enterogastrone Preparation. A. C. Ivy, A. Littman and M. I. Grossman.—p. 735.
Gastric Surgery: Review of Literature. S. F. Marshall and E. S. Phillips.—p. 748.
Flexi-Rigid, Optical Esophagoscope. A. R. Hufford.—p. 779.
Quantity and Composition of Human Colonic Flatus. E. Kirk.—p. 782.
*Digestion and Absorption After Massive Resection of Small Intestine: I. Utilization of Food from "Natural" Versus "Synthetic" Diet and Comparison of Intestinal Absorption Tests with Nutritional Balance Studies in Patients with Only 45 Cm. of Small Intestine. T. L. Althausen, K. Uyeyama and R. G. Simpson.—p. 795.
Histo-Physiologic Study of Effect of Intraarterial Injection of Acetylcholine upon Gastric Mucosa of Dog. G. M. Morton and G. W. Stavraky.—p. 808.
Three Main Components of Human Gastric Mucin: Dissolved Mucoproteose, Dissolved Mucoprotein, and Mucoid of Gastric Visible Mucus. G. B. Jerzy Glass and L. J. Boyd.—p. 821.
Acute Corrosive Gastritis: Observations on Gastric Mucosa Following Ingestion of Concentrated Hydrochloric Acid. E. D. Palmer and N. M. Scott Jr.—p. 879.
Acute Phlegmonous Gastritis. M. S. Wessell, E. L. Wilbur and R. A. Burger.—p. 884.
Perforation of Duodenal Ulcer Following Vagus Resection. P. O. Thomas.—p. 890.

Enterogastrone in Recurrence of Gastric Ulcer.—Ivy and co-workers report observations for 33 of 39 patients mentioned in a previous report and 13 additional patients. Thus 46 patients who received a course of enterogastrone injections (in most instances three or six times per week for one year) and whose subsequent course after stopping the treatment had been followed for as long as five years are reported. During the year of treatment, 41 per cent of the patients were symptom free and an additional 46 per cent had fewer recurrences. At the end of the second year (after discontinuing treatment) 40 per cent had fewer recurrences. The average of the longest symptom-free period in these 46 patients was 0.3 year during the two year period prior to therapy and 0.9 year after the therapy. The difference between 0.3 and 0.9 year is statistically significant. The authors feel that their results are sufficiently clear to conclude that there is probably an antiulcer substance in the enterogastrone preparation which tends to prevent recurrences in man. The purification of this factor is the subject of continuing research.

Digestion After Resection of Small Intestine.—Althausen and associates present studies of a woman, aged 47, in whom 435 cm. of the small intestine had been resected. The resected portion included the entire ileum and all but the upper 15 cm. of the jejunum. The remainder of the jejunum was anastomosed to the middle part of the transverse colon. The resection was carried out because of mesenteric thrombosis following appendectomy. The greatest problem has been the utilization of an adequate amount of food to maintain weight and strength. The patient's weight through adult life was about 64 Kg. As a result of the operation, the patient's weight decreased to 39.4 Kg. ten months after the operation. Thereafter, it increased to 42 Kg. and remained at this figure as of the time of writing. After ten months the woman had reached a nutritional equilibrium, which made her a good subject for the study of problems bearing on the diagnosis and treatment of diseases of the small intestine. No striking differences were found in the degree of utilization of a diet consisting of natural foods as compared with a synthetic diet. On the natural diet proteins were best utilized, and on the synthetic diet fats were utilized somewhat better. The patient was more comfortable on the synthetic diet and was able to take somewhat larger amounts of it, but after a few weeks she refused to take considerable amounts of the synthetic formula even in combination with natural foods. These results show that the small intestine is much more important for the absorption than for the digestion of food and that predigested foods have only a limited use in diseases of the small intestine except for intravenous administration during acute phases. Impairment of intestinal absorption of proteins and of fats as judged by absorption tests was greater than that demonstrated in the same patient by nutritional balance studies. One reason is that the full load of each absorption test was imposed on this patient, whereas the intake of food in the balance studies was below normal. Another reason is that in absorption tests the element of time is strictly controlled, while in balance studies there is an opportunity for overtime work by the disabled intestine. The greatest divergence between absorption test and balance studies was found in regard to carbohydrates, because destruction of the latter by bacterial action in the colon renders nutritional balance studies entirely unreliable where carbohydrates are concerned.

Journal of Aviation Medicine, St. Paul

20:91-146 (April) 1949

Linear Acceleration and Deceleration as Factors Influencing Nonvisual Orientation During Flight. B. Clark and A. Graybiel.—p. 92.
Studies to Improve Visibility of Aircraft by Use of Suitable Exterior Paint Schemes. H. G. Wagner, I. C. Blasdel and J. R. Poppen.—p. 102.
Practical Testing and Treating of Aircraft Drinking Water. F. H. Shillito and M. K. Peetz.—p. 114.
Biology of Temperament. L. H. Goldberg.—p. 120.
Anabolic Effects of Propylthiouracil on Leanness. J. Levy and J. A. Levy.—p. 124.
The Pilot Speaks. G. S. Backenstoe.—p. 130.
Problems in Aero Medical Nursing. F. P. Thorp.—p. 136.

Journal of Bacteriology, Baltimore

57:477-574 (May) 1949. Partial Index

Inhibition of Growth of Escherichia Coli by Some Derivatives of Urea. I. M. Klotz and M. Mellody.—p. 477.
*Method for Determination of Aureomycin in Blood. S. S. Schneierson and B. Toharsky.—p. 483.
Sensitivity Changes of Actinomyces Bovis to Penicillin and Streptomycin. A. Boand and M. Novak.—p. 501.
Tuberculostatic Action of Nocardia Extracts in White Mice. E. W. Emmart, R. E. Kissling and T. H. Stark.—p. 509.
Development of Proteus Cultures in Presence of Penicillin. L. Dienes.—p. 529.
Effect of Temperature upon Bacteriostasis. W. P. Van Eseltine and O. Rahn.—p. 547.
Production of Phenol and Para-Cresol by Marine Bacteria. D. M. Updegraff.—p. 555.
Spontaneous Mutation to Streptomycin Resistance and Dependence in Escherichia Coli. H. B. Newcombe and R. Hawirko.—p. 565.

Determination of Aureomycin in Blood.—Schneierson and Toharsky describe a procedure for determination of the concentration of aureomycin in the blood. They use a tube dilution method, in which the tubes are incubated at room temperature. Satisfactory correlation between known concentration of the drug and the results of assay was found with 36 prepared samples. Periodic blood levels up to twenty-four hours after administration were determined in two groups of patients receiving 250 and 500 mg. of aureomycin orally in a single dose. A significant level of the antibiotic was found in the blood of both groups of patients after twelve hours.

Journal of Clin. Endocrinology, Springfield, Ill.

9:403-480 (May) 1949

*Addison's Disease and Diabetes Mellitus in 3 Patients. S. L. Simpson.—p. 403.
Excretion of 17-Ketosteroids: I. Normal Values in Relation to Age and Sex. S. Kenigsberg, S. Pearson and T. H. McGavack.—p. 426.
Thyroid Collection of Radioactive Iodide and Serum Protein—Bound Iodine Concentration in Senescence, in Hypothyroidism and in Hypopituitarism. M. Perlmutter and D. S. Riggs.—p. 430.
Decreases in Blood Eosinophilic Leukocytes After Electrically Induced Convulsions in Man. M. D. Altschule, B. H. Parkhurst and K. J. Tillotson.—p. 440.
Thiocyanate Goiter with Myxedema: Report of 2 Cases. C. E. Richards, R. J. Brockhurst and T. H. Coleman.—p. 446.
Adrenal Cortical Carcinoma in Male with Excess Gonadotropin in Urine. W. L. Chambers.—p. 451.
Gynecomastia in Paraplegic Males: Report of 7 Cases. I. S. Cooper and T. I. Hoen.—p. 457.
Use of Bismuth Salts in Treatment of Sporadic Goiters. M. Villaverde.—p. 462.

Addison's Disease and Diabetes Mellitus.—Simpson described in 1932 a case of diabetes mellitus developing in a boy aged 16 with preexisting Addison's disease (adrenal cortical hypofunction). Necropsy revealed atrophy of the cortex of both adrenal glands and of the islets of Langerhans. He reports 2 further cases of coexistence of adrenal cortical hypofunction and diabetes mellitus, one coming to necropsy. A résumé is given of 15 cases recorded in the literature in which necropsies were performed and 6 additional cases without necropsies. The 17 necropsies revealed reduction in size and staining power of the islet cells of the pancreas sometimes with hyalinization, an increase in connective tissue and lymphocytic infiltration. The adrenal lesions were those of atrophy in 10 cases and of tuberculosis in 3. Included in the foregoing series were 2 instances of hemochromatosis, in 1 of which the adrenal lesion was fibrosis and in the other, coincidental tuberculosis. Clinically, adrenal and islet-cell insufficiency may be manifested simultaneously, or either may precede the other. When Addison's disease comes first, diabetes mellitus may be latent for months or years before manifesting itself. The evidence tends to confirm the author's suggestion, first made in 1932, that the coexistence of adrenal and islet-cell atrophy may be due to a common infective lesion. When adrenal insufficiency is superimposed on diabetes mellitus, there is a progressive reduction in insulin requirements, an increase in insulin sensitivity, instability of blood sugar levels and a proneness to sudden hypoglycemia. The existence or superimposition of adrenal insufficiency leads to a progressive loss of weight and of fat, even with reasonable substitution therapy. Ultimately, death is usually due to adrenal insufficiency rather than diabetic coma.

Journal of Clinical Investigation, Cincinnati

28:409-582 (May) 1949. Partial Index

Some Observations on Development of Hypokaliemia During Therapy of Diabetic Acidosis in Juvenile and Young Adult Subjects. L. Greenman, F. M. Mater, R. C. Gow and others.—p. 409.

Effect of Bilateral Stellate Ganglion Block on Cerebral Circulation in Normotensive and Hypertensive Patients. M. H. Harmel, J. H. Hafkenschiel, G. M. Austin and others.—p. 415.

Peptidase Activity in Human Serum Following Bone Fracture. K. Stern, A. M. Cullen and V. T. Barber.—p. 419.

Renal Regulation of Acid-Base Balance in Man. IV. Nature of Renal Compensations in Ammonium Chloride Acidosis. O. W. Sartorius, J. C. Roemmelt and R. F. Pitts.—p. 423.

Effects of Histamine on Renal Function in Hypertensive and Normotensive Subjects. F. C. Reubi and P. H. Futcher.—p. 440.

Studies of Coproporphyrin. C. J. Watson, V. Hawkinson, S. Schwartz and D. Sutherland.—p. 447.

III. Fate of Citrate in Erythroblastotic Infants Treated with Exchange Transfusion. I. B. Wexler, J. B. Pincus, S. Natelson and J. K. Lugovoy.—p. 474.

Electrolyte Changes in Human Striated Muscle in Acidosis and Alkalosis. G. H. Mudge and K. Vislocky.—p. 482.

Studies on Free Erythrocyte Protoporphyrin, Serum Iron, Serum Iron-Binding Capacity and Plasma Copper During Normal Pregnancy. J. Fay, F. E. Cartwright and M. M. Wintrobe.—p. 487.

Studies on Activation of Serum "Prothrombin-Converting Factor." R. F. Jacox.—p. 492.

Studies in Iron Transportation and Metabolism: VII. Evidence Obtained with Radioactive Iron That "Easily Split-Off" Blood Iron Is an Artefact. M. Grinstein and C. V. Moore.—p. 505.

Factor Determining Location of Pseudofractures in Osteomalacia: M. Le May and J. W. Blunt Jr.—p. 521.

Oxygen Consumption of Normal and Diseased Human Kidney. W. H. Cargill and J. B. Hickam.—p. 526.

Measurement of Glomerular and Tubular Plasma Flow in Normal and Diseased Human Kidney. W. H. Cargill.—p. 533.

Hypervolemic Anemia in Cirrhosis. J. C. Bateman, H. M. Shorr and T. Elgvin.—p. 539.

Acceleration of Linear Flow in Deep Veins of Lower Extremity of Man by Local Compression. J. R. Stanton, E. D. Freis and R. W. Wilkins.—p. 553.

Effect of Exercise and Body Position on Venous Pressure at Ankle in Patients Having Venous Valvular Defects. A. A. Pollack, B. E. Taylor, T. T. Myers and E. H. Wood.—p. 559.

Inhibition of Frostbite Wheals by Iontophoresis of Antihistaminic Agents.

Journal of Nutrition, Philadelphia

38:1-104 (May) 1949. Partial Index

Energy Expenditure of Boys and Girls 9 to 11 Years of Age (1) Sitting Listening to Radio (Phonograph), (2) Sitting Singing and (3) Standing Singing. C. M. Taylor, O. F. Pye, A. B. Caldwell and E. R. Sostman.—p. 1.

Pteroylglutamic Acid and Reproduction in Rat. M. M. Nelson and H. M. Evans.—p. 11.

Microbiological Assay of "Folic Acid" as Applied to Milk. A. Z. Hodson.—p. 25.

Effects of Thiouracil on Metabolism. J. W. Bratzler, J. R. Barnes and R. W. Swift.—p. 41.

Simultaneous Surveys of Food Consumption in Various Camps of the United States Army. H. C. Schor and H. L. Swain.—p. 51.

*Food Consumption of Soldiers in Subarctic Climate (Fort Churchill, Manitoba, Canada, 1947-1948). H. L. Swain, F. M. Toth, F. C. Consolazio and others.—p. 63.

Food Consumption of Soldiers in a Subarctic Climate.—Swain and associates made a study of the voluntary food consumption of garrison troops at Fort Churchill, Manitoba. Canada, during ten day periods in November 1947, February 1948 and April 1948. The troops ate together in the same mess and received an abundant ration of fresh and frozen foods, providing 5,500 calories per man per day. In the three surveys the average daily consumption per man, including canteen purchases, was 5,620, 5,590 and 5,690 calories. The intake was well above the allowances for active men recommended by the United States National Research Council. The troops were in good health throughout the winter and maintained their body weight. The caloric intake in the three surveys was inversely correlated with the mean outdoor temperatures prevailing at the time of survey and was directly correlated with the mean windchill.

Journal of Urology, Baltimore

61:821-980 (May) 1949. Partial Index

*Studies in Urolithiasis: II. Relationships Between Pathogenesis, Structure and Composition of Calculi. E. L. Prien.—p. 821.

*Urinary Tract Calculi in Recumbent Patients. J. C. Kimbrough and J. C. Denslow.—p. 837.

Involvement of Renal Capsule in Surgically Removed Hypernephroma: Gross and Histopathologic Study. J. B. Beare and J. R. McDonald.—p. 857.

Unilateral Polycystic Kidney Disease. G. D. Oppenheimer and L. Narins.—p. 866.

Late Renal Changes in Paraplegia: Hydronephrosis Due to Vesico-Ureteral Reflux. H. S. Talbot and R. C. Bunts.—p. 870.

Surgical Treatment of Megalo-Ureter and Presentation of Artificial Ureter. T. B. Wayman.—p. 883.

Empyema of Residual Ureter. J. W. Best and J. K. Ormond.—p. 904.

Bladder Tumors—Clinical Evaluation of Radical Transurethral Management. L. R. Reynolds, T. L. Schulte and H. J. Hammer.—p. 912.

Transurethral Biopsy: Accurate Method of Determining True Malignancy of Bladder Carcinoma. W. A. Milner.—p. 917.

Extravesical Prostatectomy: Comparison of Retropubic and Perineal Prostatectomy. R. Lich Jr., O. Grant and J. E. Maurer.—p. 930.

Evaluation of Management of Peri-Urethral Phlegmon in 272 Consecutive Cases at the Cook County Hospital. W. J. Baker, J. L. Wilkey and L. J. Barson.—p. 943.

Report of Case of Adrenal-Type Tumor of Spermatic Cord; Review of Aberrant Adrenal Tissues. T. Gualtieri and A. D. Segal.—p. 949.

Reconstruction of Scrotum: New Use for the Prepuce. F. M. Jacobs and J. L. Berry.—p. 956.

The Urologist and Artificial Insemination. M. L. Brodny and D. Rosen.—p. 960.

Genito-Urinary Aspects of Early Filariasis. D. E. Murray.—p. 967.

Urolithiasis.—Prien studied various phenomena and mechanisms of calculogenesis from the standpoint of crystallography. Pure calcium oxalate and calcium oxalate plus apatite, a complex calcium phosphate, were the substances most frequently observed in 1,000 human urinary calculi. In dissection of the nuclei of the calculi with a needle under binocular stereoscopic vision the crystalline material was identified as follows: The nuclei of calcium oxalate monohydrate calculi are composed of that substance or of apatite. Some of the calculi have a concavity on one surface with a structure which may be a pedicle in the bottom suggesting origin from a surface such as the renal papilla. It is believed that some calculi originate from an attachment to the renal papilla, as described by Randall. Papillary incrustations were produced experimentally in rats. Not all calcium oxalate monohydrate calculi originate in this manner; those with a central nucleus and symmetric, concentric layers are believed to originate by crystallization from supersaturated urine. No evidence has been found to support the theory that foreign bodies, such as desquamated epithelium, act as the nucleus for renal calculi. Calcium oxalate dihydrate calculi do not appear to have a nucleus. Study of the nucleus of calculi composed of apatite and magnesium ammonium phosphate hexahydrate is less satisfactory because of irregularity of the calculi. The metal cation rather than the acid radical is most important in a consideration of calculi from the standpoint of pathogenesis. It is possible to correlate, by optical crystallographic study, pathogenesis with composition and structure of various types of calculi. It is often possible to reconstruct the clinical history by an optical study of the calculus obtained from the patient.

Urinary Tract Calculi in Recumbent Patients.—Kimbrough and Denslow report the occurrence of urinary calculi in 15 of 800 young recumbent patients, immobilized for long periods for bone injury. The incidence of such a small percentage (2 per cent) of calculus formation in such a large number of hospitalized patients with similar injuries with almost identical management makes it evident that there is a stone diathesis due to general derangement of metabolism and/or local renal factors. Reduced fluid intake, stasis and focal infections are the chief etiologic factors. Infections of the urinary tract are not important. The shortest period noted for formation of calculi was 74 days and the longest 1,200; the average time was 362 and the mean time 272 days. Adequate proper care of patients immobilized long periods because of bone injury will prevent urolithiasis in almost all cases. It is difficult to carry on an adequate regimen of fluid intake, diet, movement of patient and chemotherapy for all the immobilized patients in a large service. The selection of patients especially susceptible to urolithiasis and concentration of preventive measures for them will produce good results. Removal of calculi by dissolution and spontaneous passage is the choice method of treatment. Manipulation should be practiced with caution and conservatism. Operative treatment should not be delayed when reasonable attempts at other measures are unsuccessful. Repeated roentgen studies of the urinary tract for detection of calculus and frequent urine cultures to note infection should be carried out.

J. Venereal Disease Information, Washington, D. C.

30:125-158 (May) 1949

Penicillin Therapy of Early Syphilis: IV. R. C. Arnold, J. F. Mahoney, F. P. Nicholson and R. D. Wright.—p. 125.
Venereal Disease Case Finding in Quitman County, Mississippi. A. L. Gray, H. Boone and R. S. Hibbets.—p. 127.
Socioeconomic Factors in Syphilis Prevalence, Savannah, Georgia. C. D. Bowdoin, C. A. Henderson, W. T. Davis Jr. and others.—p. 131.
Contact Investigation of Syphilis. J. S. Spoto and A. P. Iskrant.—p. 140.
Sugar Fermentations of Gram-Negative Diplococci Isolated from Genitourinary Tract of Penicillin-Treated Gonorrhea Patients. L. Wax. —p. 145.

30:159-182 (June) 1949

Stimulating Venereal Disease Morbidity Reporting by Private Physicians: I. Follow-up of Positive Serologic Test Reports. B. H. Sklar and L. M. Schuman.—p. 160.
Syphilis Contact Investigation in Rural County in Mississippi. A. L. Gray, A. P. Iskrant and R. S. Hibbets.—p. 165.
Stable Control Serum for Standardizing Sensitivity of Tests Used in Diagnosis and Control of Syphilis. G. R. Cannefax.—p. 169.

Maine Medical Association Journal, Portland

40:99-124 (May) 1949

Surgical Problems in Children. D. H. R. Lester.—p. 99.
Neuropsychiatric and Medical Aspects of Head Injuries. P. A. Jones. —p. 101.
Surgical Aspects of Head Injuries. G. L. Maltby.—p. 102.
Clinical Evaluation of Pyrrolazote and Orthoxine in Allergic Diseases. B. Zolov.—p. 105.
Relief of Asthmatic Seizures with Micronized Epinephrine 1:1,000. A. L. Maietta.—p. 108.
Dermatophytosis. O. F. Jillson.—p. 110.
Clinical Evaluation of Trimeton. H. I. Goldman.—p. 111.

40:125-172 (June) 1949

Cancer of Larynx: Report of Case. P. E. Provost.—p. 125.
Service for Veteran at Neuropsychiatric Hospital, Togus, Maine. I. Zeltzerman.—p. 126.
Surgery in Treatment of Gastro-Duodenal Ulcer. J. A. Nelson.—p. 128.
Amicrobic Pyuria: Report of 2 Cases. M. Emanuel.—p. 133.
*Myasthenia Gravis with Thymoma: Case Report. D. Kirkham.—p. 138.

Myasthenia Gravis with Thymoma.—Kirkham presents a history of a printer, aged 53, who was hospitalized for the seventh time at the Veterans Administration Hospital at Togus, Maine, on June 24, 1948. He was admitted to this hospital in November 1941, with a history of difficulty in eating, of six months' duration, consisting of frequent regurgitation of fluids through the nose, dropping of his jaw and inability to chew his food. He improved somewhat and was discharged in three weeks. The second admission was in December, for the same complaints. After several months in the hospital and continued ptosis, regurgitation, generalized weakness and difficulty in chewing, a diagnosis of myasthenia gravis was made and treatment was started with ephedrine sulfate ⅜ grain (24 mg.) three times a day and 1 ampule of neostigmine daily by hypodermic injection. During the next six years, the patient was admitted on four occasions because of exacerbations of weakness associated with infections of the respiratory tract. The severity of his symptoms varied from time to time. For one week prior to the final admission, he had considerable cough and expectoration. He stated that he could not raise his sputum properly, so that it remained in his throat, causing him to gag and choke. During the patient's last stay in the hospital the course was stormy. Despite intensive treatment with neostigmine bromide, the use of the respirator and continued oxygen, he became increasingly cyanotic and died. Necropsy revealed a thymoma. Sixty-two of 100 patients reported in the literature were either cured or improved by the removal of the thymoma.

New England Journal of Medicine, Boston

240:787-824 (May 19) 1949

*Hypercalcemia Without Hypercalcuria or Hypophosphatemia, Calcinosis and Renal Insufficiency: Syndrome Following Prolonged Intake of Milk and Alkali. C. H. Burnett, R. R. Commons, F. Albright and J. E. Howard.—p. 787.
Death from Attempted Abortion with Potassium Permanganate Douche. W. W. Jetter and F. T. Hunter.—p. 794.
Hereditary Multiple Exostoses. J. Rose and P. D. Doolan.—p. 799.
Comparison of Pteroylglutamic Acid and Liver Extract Maintenance Therapy in Sprue. H. J. Fox.—p. 801.
Physiology of Human Conception. J. Rock.—p. 804.
Persistent Omphalomesenteric Duct, with Focal Ulceration, Probably Peptic.—p. 813.
Acute and Chronic Pancreatitis, with Pseudocyst Formation. Erosion of Superior Pancreaticoduodenal Artery.—p. 815.

Syndrome Following Prolonged Intake of Milk and Alkali. — Burnett and associates describe a syndrome they observed in 6 male patients with a history of peptic ulcer treated by excessive intake of milk and alkali for many years. The syndrome is characterized by hypercalcemia without hypercalcuria or hypophosphatemia, normal serum alkaline phosphatase levels, pronounced renal insufficiency with azotemia, mild alkalosis, calcinosis manifested especially by an ocular lesion resembling band keratitis and improvement on an intake low in milk and absorbable alkali. Although primary hyperparathyroidism could not be excluded positively in all patients, the evidence suggests that the abnormalities observed in the calcium and phosphorus metabolisms were a result of the following sequence of events: excessive intake of milk (a foodstuff high in calcium and phosphorus) and alkalis; renal damage; tendency to fixation in urinary calcium excretion; hypercalcemia; tendency to supersaturation in respect to calcium phosphate, and calcinosis. The improvement resulting from a low intake strongly supports this sequence. All 6 patients were found to have chronic renal failure. In the 2 patients who are still living and in the 3 who died, the histories gave no evidence of previous renal disease, although 2 were known to have had hypertension. The case in which a postmortem examination was performed showed a renal lesion diagnosed as pyelonephritis and nephrocalcinosis. From this case one might hypothesize that for the production of the syndrome the presence of underlying renal disease is necessary on which is superimposed the harmful effect of milk and alkalies. In 1 case the urine was normal, as were the results of a kidney biopsy done only two years before renal insufficiency developed, so that there was little evidence of antecedent renal disease in this case.

Rhode Island Medical Journal, Providence

32:241-300 (May) 1949

Acute Diverticulitis of Cecum: Report of 6 Cases. A. V. Migliaccio. —p. 255.
Aspects of Aviation Medicine. J. C. Early Jr.—p. 260.
Cutaneous Manifestations of Traveling Needle. F. Ronchese.—p. 264.
What Insurance Companies are Doing and Can Do to Extend Medical Care in New England. H. D. Locke.—p. 272.

Virginia Medical Monthly, Richmond

76:271-326 (June) 1949

Some Practical Public Health Problems in Virginia. E. M. Holmes Jr. —p. 275.
Use of Antihistamine Drugs in Dermatology. E. E. Barksdale and G. S. Ellis.—p. 278.
Bacterial Endocarditis: Its Early Diagnosis and Modern Treatment. P. D. Camp.—p. 281.
Intrathoracic Hour-Glass Ganglioneuroma: Case Report. H. C. Meredith Jr.—p. 288.
Hemostatic Absorbable Oxidized Cellulose in Traumatic Injuries. C. F. Johnston Jr.—p. 292.
Consideration of Effects of Minor Degrees of Failure of Fusion of Mullerian Ducts. Gwen S. Hudson.—p. 295.
Recognition of Late Pulmonary Residuals of Coccidioidomycosis. R. P. Pillow and T. E. Finnegan.—p. 298.
Precocious Puberty in Girls. R. H. Hoge.—p. 303.
Adult Cardiac Rehabilitation. N. Bloom.—p. 307.
Anesthesia in Its Relationship to Surgery. A. D. Hutton.—p. 308.

Wisconsin Medical Journal, Madison

48:393-472 (May) 1949

Clinical Expressions of Sarcoidosis (Boeck). H. A. Dickie and W. S. Middleton.—p. 407.
Primary Hyperparathyroidism with Parathyroid Adenoma: Report of Case. D. V. Elconin and J. R. Stone.—p. 413.
Research Progress on the Common Cold. N. H. Topping.—p. 418.
Hypothyroidism with Loss of Weight and Without Myxedema: Report of Case and Review of Literature. W. H. Spankus and B. J. Peters—p. 421.
Etiology of Congenital Malformations. H. A. Sincock.—p. 427.

Yale Journal of Biology and Medicine, New Haven

21:365-448 (May) 1949

Brief Recollections of the Yale Medical School (1906-1920). G. Blumer. —p. 365.
Experimental Study on Influence of Different Vehicles on Generalized and Topical Effect of Penicillin G. E. Grunberg and R. J. Schnitzer. —p. 377.
*Duration of Immunity to Tetanus. H. W. Baird III.—p. 385.
Status of Field Factor in Biology. C. D. King.—p. 391.
Studies in Experimental Frostbite: IV. Response of Sympathetically Denervated Extremity to Freezing. R. E. Lempke and H. B. Shumacker Jr.—p. 401.
Gross Efficiency of Growth of the Rat as Simple Mathematical Function of Time. J. Mayer.—p. 415.
Digitoxin—Critical Review. W. C. Diefenbach and J. K. Meneely Jr. —p. 421.
Elevated Environmental Temperature: Its Possible Influence on Action of Spreading Factor. J. C. Opsahl.—p. 433.

Tetanus Immunity.—Baird tested 23 men between the ages of 20 and 30 years who had served in the armed forces and were given basic tetanus immunization with toxoid or who were given their last booster dose four or more years previously. Six of the 23 were tested before and five and seven days after a booster dose of 0.5 cc. of alum-precipitated toxoid was administered. The serum specimens of the remaining 17 men were obtained at five days only. Considerable variation was observed in the specimens tested. In every case the serum was observed to have at least 0.1 unit of antitoxin five days after the booster injection. The six serum specimens tested at seven days showed a continuance of the rise. In the 1 case in which no residual titer was found and the response was 0.0316 unit, closer investigation showed that the initial immunization had not been adequate. Nine others did not show the level considered as a minimum for protection before the booster dose was given. Results indicate that by present standards an adequate antitoxin response develops within five days after the injection of 0.5 cc. alum-precipitated toxoid.

Digitoxin.—According to Diefenbach and Meneely, the potency of 1 mg. of digitoxin is approximately equal to 1,000 mg. of U.S.P. XII digitalis powder and to 1 U.S.P. XII digitalis unit. A dose of 1.25 mg. of digitoxin induces the same degree of reduction of ventricular rate as 1.25 Gm. or 16.3 cat units of whole leaf digitalis. Therapeutically the most important use of digitoxin is in congestive heart failure. It is useful regardless of whether the failure is predominantly of the right or left ventricle or both. The cause of heart failure modifies the response to the drug. The best results are obtained when failure is due to hypertensive or arteriosclerotic heart disease. The excretion rate of the drug is limited, and, with excessive doses, the drug accumulates in the body to a point where toxic symptoms occur which are different in different persons. Anorexia usually appears before nausea and vomiting. Diarrhea and abdominal pain occur occasionally. Almost every clinically known type of cardiac arrythmia may occur. Whenever digitoxin is used, the appearance of signs of cardiac disorder must be watched for carefully, not only clinically but with the aid of the electrocardiogram, and such appearance should call for the immediate discontinuance of the drug. In a follow-up study of three months to two years of 100 consecutive patients with congestive heart failure treated with digitoxin, toxic symptoms were observed in 20 between the ages of 40 and 77. The toxic symptoms appear more frequently with digitoxin than with whole leaf digitalis, and they are more prolonged. In most patients 1.2 mg. of digitoxin given in the first twenty-four hours is not sufficient to achieve adequate digitalization. Initial digitalization may be best attained with multiple doses, i. e., 0.4 mg. every six hours until the desired effects are attained. The best over-all maintenance dose is 0.1 mg.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:1019-1062 (June 11) 1949

*Lumbo-Dorsal Sympathectomy in Severe Hypertension: Interim Survey. J. C. Harland and F. d'Abreu.—p. 1019.
*Painful Amputation Stumps and Phantom Limbs: Treatment by Repeated Percussion to Stump Neuromata. W. R. Russell.—p. 1024.
*Chemical Sympathectomy. H. A. Haxton.—p. 1026.
Eosinophilic Xanthomatous Granuloma with Honeycomb Lungs. T. Parkinson.—p. 1029.
Acute Pneumonitis in a Beryllium Worker. G. R. Royston.—p. 1030.
Infective Hepatitis and Portal Cirrhosis. K. Damodaran.—p. 1032.
Treatment of Abortus Fever with Sulfonamides and Blood Transfusion. C. Romer.—p. 1035.
Treatment of Herpes Zoster with Liver Extract. H. S. Gaskell.—p. 1037.

Lumbodorsal Sympathectomy in Hypertension.—Harland and d'Abreu report on 24 cases of severe hypertension in which lumbodorsal sympathectomy had been done. The chances of permanently lowering the blood pressure are slight; retinopathy may improve considerably; there is not enough evidence to indicate clearly the effect in hypertensive heart disease—some patients may appear to improve temporarily, but this is unlikely with severe disease; operation causes striking symptomatic relief, with notable gain in weight, and in primary malignant hypertension the malignant phase may disappear. In a properly selected case the relief is greater than that which can be obtained by medical treatment alone. Such cases are not numerous. The operation should be limited to patients with severe and rapidly progressive disease with severe symptoms referable to their hypertensive state which comply with the following conditions: age less than 50 years; the renal function should be good; there should be no evidence of coronary or cerebral artery disease, and there should be no severe heart disease or heart failure. Operation in cases of early and mild disease is not advisable.

Painful Amputation Stumps: Percussion Stump Neuromas.—Russell cites cases which indicate that treatment at the periphery may prove successful. This possibility was considered because nerve endings in the skin are rendered insensitive by occupations which involve repeated minor trauma or prolonged firm pressure on the skin, because conduction of a mixed nerve is easily interrupted by repeated pressure and because the regenerating nerve fibers in an amputation stump are likely to be no less vulnerable to minor trauma or pressure than are normal nerves and nerve endings. The method tried was deadening of the neuromas with procaine and percussion for ten to fifteen minutes with a piece of wood. Later, the use of a local analgesic was discontinued and a sphygmomanometer cuff applied instead. If the stump is too short for the cuff, hypalgesia of the neuromas can be obtained by prolonged pressure on them. The application of pressure is just as effective as hammering in abolishing the stump pain. Bruising of the stump should be avoided. Treatment at first must be repeated at least twice daily; soon one treatment a day is usually sufficient, and the patient learns to knock away his phantom pain whenever it becomes troublesome. The reappearance of long vanished parts of the phantom and of preamputation sensations was experienced during percussion.

Chemical Sympathectomy.—Haxton cites evidence which indicates that aqueous phenol should be a useful agent for paravertebral injection of the sympathetic chain where interruption of activity longer than that provided by procaine is required. He used such injections in the treatment of vascular disorders in about 220 cases. The experience has shown the treatment to be of value and worthy of addition to the surgeon's armamentarium. The author used 10 to 12 cc. of 6 or 10 per cent phenol in aqueous solution. The injection results in destruction of the ganglion cells, with a consequent interruption of sympathetic activity which can persist for at least two years. It is likely that some sympathetic activity will return in most cases, as also happens after open operation; but the method has the merit, denied to the operation, that it can be easily and rapidly repeated if necessary. Complications are slight and much less troublesome than those following alcohol injections. The method should be employed only by those who have had much experience with paravertebral injection of the sympathetic chain with local analgesics, since injection of phenol into the theca or a blood vessel would probably have serious consequences. Compared with open operation, chemical sympathectomy is a relatively minor ordeal for the patient, necessitating no rest in bed (most patients have been treated as outpatients). Sufferers from vascular disorders will much more readily submit to this than to the major operation of open sympathectomy, and the treatment can be employed in cases in which operation is considered unjustifiable because of the age and general condition of the patient or because the chances of improvement are insufficient, e. g., in claudication and chronic ulceration of the leg.

Lancet, London

1:*987-1030 (June 11) 1949*

Feeding of Premature Babies. F. J. Ford.—p. 987.
Testicular Pain: Its Significance and Localization. F. R. Brown.—p. 994.
Effect of Tetraethylammonium Bromide on Kidneys. K. Aas and E. Blegen.—p. 999.
*Sudden Death from Tetraethylammonium Bromide. M. Schwartz.—p. 1001.
Factors Affecting Response of Immunised Guineapigs to Antigenic Stimulus: Further Observations. P. Hartley and O. M. Hartley.—p. 1003.
Acute Jejunitis: Report of Case. A. G. Young.—p. 1005.
Hormone Treatment of Sexual Offender. F. L. Golla and R. S. Hodge.—p. 1006.

Sudden Death from Tetraethylammonium Bromide.—Schwartz points out that the tetraethylammonium ion temporarily blocks the autonomic ganglions and that this fact has encouraged its diagnostic and therapeutic application. Thousands of patients have been treated with tetraethylammonium bromide or chloride. It is held to be harmless, although some serious reactions have been observed. In 1947 the author treated 7 patients with bronchial asthma with this drug. In the first 6 cases the effect on the asthma was slight; in 2 cases tetraethylammonium bromide checked the attacks, and in the remaining 4 the asthma was slightly aggravated. The dosage was 300 to 400 mg. injected intravenously. In none of the 6 cases were any alarming side effects observed. The seventh patient, a man aged 63, died immediately after the injection of the drug. Necropsy was done, and, although the immediate cause of death could not be definitely established, there is no reason to suppose that anything but the tetraethylammonium bromide was responsible. The patient had been given an intravenous injection of a 10 per cent solution of tetraethylammonium bromide. After forty seconds, during which time 230 mg. had been injected, the patient suddenly became pulseless and stopped breathing. Injection of epinephrine and artificial respiration with oxygen were of no benefit. It seems that the response to tetraethylammonium bromide may be greater in patients with asthma than in normal persons. Because of this risk and because tetraethylammonium bromide does not seem to be particularly effective against asthma, its use in patients with asthma is not advisable.

Medical Journal of Australia, Sydney

1:*697-732* (May 28) 1949

*Assessment of Streptomycin in Medical Practice. D. B. Rosenthal.—p. 697.
Assessment of Streptomycin: Surgical Aspects. J. Hayward.—p. 706.
Treatment of Anemia. R. Jeremy.—p. 711.
Some Problems in Surgery of Gall-Bladder. V. Hurley.—p. 713.
Substitute for Buttermilk and Its Use in Infant Feeding. R. H. Crisp.—p. 717.

Streptomycin in Medical Practice.—Rosenthal states that streptomycin is the drug of choice in the treatment of generalized hematogenous or miliary tuberculosis, tuberculous meningitis, ulcerative tracheobronchial tuberculosis, tuberculous pharyngitis and laryngitis, tuberculous enteritis and peritonitis, and draining cutaneous sinuses. It is probably of value in genitourinary and bone and joint tuberculosis. In pulmonary tuberculosis streptomycin is indicated as follows: in acute pneumonic and bronchopneumonic types; in acute exacerbations in chronic infections; in the progressive exudative type; in association with surgical treatment, including all forms of collapse therapy, on a planned regimen; in advanced cases for symptomatic benefit or relief; in any stage or type of infection with which is associated advanced or progressing laryngeal or intestinal tuberculosis. Streptomycin is not indicated in early minimal lesions, in tuberculoma, in chronic fibrocavernous disease without manifest activity or in tuberculous empyema. Streptomycin is generally not effective where caseation predominates, as in chronic pulmonary tuberculosis and in caseating lymph nodes before drainage.

Progrès Médical, Paris

77:241-272 (June 10) 1949

*Treatment of Postphlebitic Sequelae. R. Leriche.—p. 243.
Considerations on Phlebitis. E. Chomé.—p. 252.

Postphlebitic Sequelae.—According to Leriche, circulation remains impaired after thrombosis of a large venous trunk in spite of the use of heparin, even in cases in which the permeability of the thrombosed area has been restored. There may be stasis, fatigue, pain and trophic disturbances. Satisfactory results were obtained with resection of the thrombosed iliac vein with or without ganglionectomy in 6 cases, resection of the superficial femoral vein in 1 case and of vena cava in 1 case. Good results were obtained and maintained for twenty-two years with the resection of a 2 cm. segment of the femoral vein in the median part of the thigh combined with perifemoral sympathectomy in a man aged 26 whose postphlebitic syndrome after typhoid was complicated by left phlebitis; the obliterated area itself could not be localized and was therefore beyond reach. Good results were obtained and maintained for twelve years with the freeing of the femoral vein from thick fibrous tissue in the area of the fracture in a young man who had sustained a fracture of the femur followed by a painful postphlebitic syndrome. The resection on the vessel was combined with perifemoral sympathectomy. Removal of saphenous varicosities was successfully performed in several cases of painful disturbance after an old phlebitis. This method of treatment may be preferred to that of sclerosing injections. Lumbar sympathectomy was performed in 28 cases of phlebitic sequelae in which follow-up was continued two to eleven years. Results were excellent, particularly in cases in which operative intervention was performed early. Unilateral sympathectomy was effective on both sides. There was little improvement in patients with pronounced edema. Peripheral neurotomy proved useful in cases of refractory pain. Lumbar infiltration or intra-arterial injections of procaine hydrochloride should be employed as a rule in the initial treatment of ulcers of the leg. Grafting should be performed only after removal of the adjacent vein.

Wiener medizinische Wochenschrift, Vienna

99:*229-248 (May 21) 1949.* **Partial Index**

*Endoscopic Transpleural Splanchnicotomy According to Kux, a New Method for Treatment of Gastric and Duodenal Ulcers. W. Baumgartner.—p. 229.
Treatment Aimed at Correction of Defective Vegetative Regulation. W. Birkmayer.—p. 230.
Etiology and Treatment of Indolent Ulcer of the Leg. E. Rappert.—p. 235.

Splanchnicotomy in Treatment of Gastric and Duodenal Ulcers.—Baumgartner treated 25 patients with ulcers of the duodenum or stomach (demonstrated on roentgenologic examination) by endoscopic, transpleural splanchnicotomy. The operation is carried out with a thoracoscope to which an injection apparatus had been added. The thoracic sympathetic trunk and both splanchnic nerves are clearly visible. Infiltration of the latter where they arise from the ganglionated trunk with several cubic centimeters of procaine hydrochloride is followed immediately by division of the nerves with the electric current applied by means of a specially constructed wire loop. Roentgenologic examination of the patients was performed postoperatively at four week intervals. Not a single niche could be demonstrated after twelve weeks. The patients' weight was increased by 8 to 12 pounds (3.6 to 5.4 Kg.). Appetite was good, patients were not restricted to a diet, they smoked and resumed their work. There was temporary constipation for three or four days after the operative intervention, followed spontaneously by regular bowel movements. In contrast to observations by Dragstedt, the author suggests that the sympathicotonic angiospasm and circumscribed atony of the wall in the ulcer area are to be considered as primary factors, while vagotonic spasm of the muscularis mucosae, spasm of the ring segment, hyperperistalsis and hyperacidity are secondary reactions within the vegetative antagonism.

Book Notices

Pathology of the Nervous System: A Student's Introduction. By J. Henry Biggart, C.B.E., M.D., D.Sc., Professor of Pathology, Queen's University, Belfast. Foreword by Professor A. Murray Drennan, M.D., F.R.C.P.E., F.R.S.E. Second edition. Cloth. Price, $6. Pp. 352, with 242 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

This is the second edition of an extremely practical and easily read text on pathology of the nervous system for the undergraduate student. There are 242 illustrations and 10 colored plates and 352 pages. Several of the chapters of the first edition have been rewritten, and in others new sections have been included. The book is an outgrowth of lectures given by the author to his medical students. There are fourteen chapters starting with the neurone and its reactions to disease and terminating in tumors and defects of development in the nervous system. The author wants the student to understand neuropathology in its relation to general pathology because the same problems concern both. This book is one of the best on pathology of the nervous system because it discusses the practical and true pathologic findings. The author has kept controversial discussions out of his text. This book is highly recommended to the undergraduate student because the subject matter is easy to read, clearly understood and interesting. The illustrations are excellent.

Constructive Uses of Atomic Energy. Edited by S. C. Rothmann. By Samuel K. Allison and others. Cloth. Price, $3. Pp. 258, with illustrations. Harper & Brothers, 49 E. 33d St., New York 16, 1949.

The fourteen chapters of this book are written by different authors, and four deal with subjects of general interest to the medical reader. The chapter on "The Use of Tracers in Biology" by G. C. Butler is a concise summary of the subject in 14 pages, with enough detail to keep it from being vague. In "The Medical Uses of Atomic Energy" C. P. Rhoads gives an absorbing general account of the clinical application of radiophosphorus and radioiodine. In "Radioactive Tracers in Pharmacy" John E. Christian gives interesting details of studies on the rate of absorption of drugs from enteric-coated capsules, the preparation of radioactive galenicals by growing plants in radiocarbon dioxide, and so on. In a too brief chapter of 4 pages G. Failla discusses "Nuclear Physics and Medical Research." A 31 page glossary informally adds many items that do not occur in the text. The book is well indexed and illustrated with beautiful new photographs.

The Ethics of Sexual Acts. By René Guyon. Translated from the French for the First Time by J. C. and Ingeborg Flugel. With an Introduction and Notes by Norman Haire, Ch.M., M.B. With a new Introduction by Harry Benjamin, M.D. This Book is the Authorized English Translation of the French Volume, La légitimité des actes sexuels. Second printing. Cloth, $4. Pp. 383. Alfred A. Knopf, Inc., 501 Madison Ave., New York 22, 1948.

The philosophic aspects of sex are seldom considered by the medical profession. This book, published first in 1934 and reprinted in 1948, is devoted entirely to such a consideration. It is the author's view that the whole trouble about sexual acts is their inclusion in moral codes and that the concept of sin brings on mental disturbances which might not otherwise develop. His point of view can be condensed into a few words which were the title of a song that had much popularity in the United States recently. The eminent French author is convinced that there is no harm in "Doing What Comes Naturally."

Canine Surgery: A Text and Reference Work. Edited by H. Preston Hoskins, V.M.D., and J. V. Lacroix, D.V.S. The Work of Twenty-Four American Authors. Cloth. Price, $12. Pp. 565, with 345 illustrations. The North American Veterinarian, Inc., Box 872, Evanston, Ill., 1949.

This is a text and reference book on surgery of the dog for students and practitioners of veterinary medicine. Twenty-four authors contribute thirty-one chapters on a wide variety of topics including anatomy, physiology, surgical principles, sterile technic, preoperative and postoperative care, surgery of the various systems and fractures. Diagnosis of the various conditions requiring surgical treatment is well covered, and there are many photographs of lesions. This book will probably be of some help to medical research scientists who use dogs.

Physiology of Exercise. By Laurence E. Morehouse, Ph.D., Associate Professor of Physical Education, The University of Southern California, Los Angeles, and Augustus T. Miller, Jr., Ph.D., Associate Professor of Physiology, University of North Carolina Medical School, Chapel Hill, North Carolina. Fabrikoid. Price, $4.75. Pp. 353, with 52 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

The authors point out in the preface that this short monograph was prepared because of their conviction that the physical potentialities of the human machine are revealed to the greatest advantage by an analysis of the manner in which they meet the exacting requirements of exercise. The earlier chapters deal with the essential physiologic background required for an understanding of the response of the body to exercise. Only an elementary acquaintance with some of the basic principles of chemistry and physics has therefore been taken for granted with respect to the reader. Later chapters are concerned with skill, endurance, fatigue, training, environmental temperatures and other topics—all pertinent to work performance. A concise and well selected bibliography will be found at the end of each of the thirty chapters of the book.

The authors appear especially well qualified to present the physiology of exercise. One of them, in addition to a background of physical education, was a research fellow at the Fatigue Laboratory of Harvard University. In consequence, many of the experimental studies reviewed were carried out in that laboratory, particularly as related to the physiologic effects on men at hard work, on the treadmill or under other controlled laboratory conditions.

The work is of special value in bringing together in concise form the significant advances in the field just prior to and during the recent war. The collection of this material would ordinarily entail an extensive search of the literature. The book should be useful for reference and as a textbook in colleges and professional schools.

Pageant of Life Science. By M. W. de Laubenfels, Ph.D., Professor of Zoology, University of Hawaii. Fourth edition. Cloth. Price, $5.95. Pp. 407, with 1024 illustrations, including 748 drawings by the author. Prentice-Hall, Inc., 70 5th Ave., New York 11, 1949.

This is a beautifully produced textual and pictorial presentation of scientific information pertaining to living things. It deals with five thousand separate subjects and twenty-eight regions of natural science, such as general biology, the biology of the human being and of plants and animals and so-called social biology, which has to do with the effects on living beings of their surroundings, ancestors, eugenics and evolution. The book is richly illustrated; there is scarcely a page without a line drawing, diagram or photograph. There are even touches of humor, such as the cartoon showing the tiger mother saying to her cub, "Eat the roughage too, dear," while in the picture are shown shoes and spectacles left over from the otherwise completely devoured victim.

There is nothing in the book to indicate for what age levels it is intended, but it should be a useful reference book at the high school level and in colleges. The subjects are well organized, and the explanations, as well as the illustrations, are notable for their concise clarity. No one who has access to this book need remain confused about the scientific facts relating to living things.

How to Be Healthy in Hot Climates. By Eleanor T. Calverley, M.D. Cloth. Price, $3. Pp. 275. Thomas Y. Crowell Company, 432 4th Ave., New York 16, 1949.

This book is a presentation of basic information that travelers need in planning trips or residence in tropical countries. Special consideration is given to safe water supplies, proper diet, vitamin needs and care of the skin and eyes. Intestinal diseases, malaria and other miscellaneous diseases known to be of more frequent occurrence in tropical areas are well described. Appendixes on caloric value of foods and caloric requirements in the tropics, information on communicable diseases and basic sick room supplies are furnished.

This book is primarily for the laity. It does not furnish information that is not available elsewhere in general medical treatises on tropical diseases. Nevertheless, anyone preparing for life in tropical climates can obtain much compact and useful information from this volume.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

AUREOMYCIN

To the Editor:—It has been my impression that the gastric irritation following the oral administration of aureomycin has been diminished by the use of colloidal aluminum hydroxide. Is there any evidence that the combined use of these two products diminishes the absorption or efficacy of aureomycin?

H. King Wade, M.D., Hot Springs, Ark.

Answer.—Knowledge concerning the factors which determine the absorption and excretion of aureomycin is not exact, because of the difficulty of measuring accurately, by biologic methods, the amount of the antibiotic which may be present in body fluids or tissues. A definite statement cannot be made regarding the effect of administration of preparations of aluminum hydroxide in conjunction with aureomycin. However, clinical observation would lead one to believe that neither the absorption nor the efficacy of aureomycin is changed by or is the result of the concomitant administration of preparation of aluminum hydroxide.

SKIN GRAFTING FOLLOWING MALIGNANCY

To the Editor:—Is there any risk of one's stimulating revival of malignancy locally in grafting normal tissues on operative wounds for cosmetic purposes after removal of malignant tumors, as those of the breast? With respect to normal tissues, I am inclined to doubt whether the tissues taken from unaffected areas of the same patient are really normal. My patient has a malignant disease of unknown origin.

Harry Marcus, M.D., Bronx, N. Y.

Answer.—If the malignant condition which made the original operative procedure necessary has been completely eradicated, there is no increased danger in one's performing a skin graft on such a patient. However, if the malignant tissue has not been entirely removed but is entrapped in scar tissue produced by the surgical procedure, or roentgen rays or radium which might have been administered, then cutting into a tissue to prepare the field for grafting may free these cells and hasten recurrence. It is, therefore, an accepted rule that skin grafting should not be carried out until sufficient time has elapsed to indicate the complete removal of the primary lesion.

UNDEVELOPED BREAST

To the Editor:—What is the significance of failure of development of the left breast in a 27 year old woman who is a virgin. The right breast is apparently normal in size, while the left is only half the size of the right but is otherwise normal. There is no evidence of failure of development or other abnormalities in any other part of the body. Is this breast apt to cause trouble in the future? Should she be allowed to nurse on this breast if she gives birth?

M.D., New York.

Answer.—Inequality in the size of the two breasts is common. Usually the larger breast is the abnormal one and is hypertrophied 10 to 25 per cent more than its fellow. Hypoplasia, accounting for inequality of mammary development, is rare, and usually the smaller breast is dwarfed by 25 to 50 per cent. There is no significance in such inequality of development other than cosmetic. It generally indicates a lack of sensitivity of the smaller breast to endocrine stimulation when unilateral hypomastia is present and an increased sensitivity to endocrine stimulation when unilateral hypertrophy is present. There is no reason to anticipate trouble in the underdeveloped breast, and there is no contraindication to nursing from both breasts if parturition occurs.

EPINEPHRINE FOR INHALATION

To the Editor:—I am told that the recent edition of the U. S. Dispensatory indicates that epinephrine 1: 100, for inhalation, may be used in as large dosage as 0.5 cc. every four hours. This seems to be overdosage.

Alfred H. Weitkamp, M.D., Los Angeles.

Answer.—The dose of epinephrine 1: 100 given by inhalation is stated in the most recent edition of the U. S. Dispensatory to be 0.5 to 1.0 cc. This is not an overdose, since in severe asthma even the largest recommended amount may be only partially effective. Both animal and clinical studies have shown that epinephrine in this quantity is not sufficiently absorbed into the general circulation from the bronchi and alveoli to produce more than transient and minor systemic effects. Obviously, the smallest amount which will produce the desired action should be used, and patients soon learn to adjust the dosage to meet their needs.

PARKINSON'S DISEASE

To the Editor:—A white, female patient, age 52, suffered an attack of encephalitis lethargica in 1939. After that her right arm became spastic; later the spastic condition spread over the entire body and both extremities. When I first saw her, about a year ago, she walked with a shuffling gait and had little use of her extremities. Her face is masklike, and speech is difficult. She has the appearance of a patient suffering from advanced Parkinson's disease. She had been treated in several clinics with various belladonna and atropine preparations (syntropan,® prostigmine,®) with little or no benefit. What would you suggest in the way of treatment? Do you know of a hospital or clinic where special emphasis is given to the treatment of this kind of condition?

J. H. Chapman, M.D., Walterboro, S. C.

Answer.—Investigation of various preparations thought to be useful in the symptomatic treatment of Parkinson's disease is being carried out in various medical centers in this country. Recently a report from investigators at the Massachusetts General Hospital, Boston, on the use of panparnit® (diethylaminoethyl-1-phenylcyclopentane-1-carboxylate hydrochloride), one of the drugs under consideration, was published (Schwab, R. S., and Leigh, D.: Parpanit® in the Treatment of Parkinson's Disease, J. A. M. A. **139:** 629-634 [March 5] 1949). Other reports are being assembled and will be published shortly. A number of the large neurologic clinics are interested in the treatment of Parkinson's disease and are staffed by physicians who can give expert advice.

CLINITEST

To the Editor:—Are clinitest urine sugar tablets recognized as satisfactory in tests of the urine for sugar in clinical work and insurance examinations?

Robert S. Srigley, M.D., Hollis, Okla.

Answer.—Clinitest is a good screening test. It may be considered reliable only if the urine does not contain sugar. If positive or doubtful reduction reactions are obtained, the urine should be reexamined with a reliable quantitative method.

TREATMENT OF ARTERIOSCLEROSIS

To the Editor:—In Queries and Minor Notes in THE JOURNAL, Aug. 27, 1949, a Delaware physician inquires "What is the present status of choline and inositol in the treatment of arteriosclerosis?" Your consultant answers, "Dr. Lester Morrison of the College of Medical Evangelists found that choline appears to have a slight favorable effect on cholesterol-induced arteriosclerosis in rabbits."

In my recently published conclusions, "Choline caused re-absorption of aortic arteriosclerosis in the majority of 23 rabbits whose lesions had been produced by cholesterol feeding." (Proc. Soc. Exper. Biol. & Med. 69: 283, 1948). "The oral feeding of 1.0 gram choline daily together with 0.5 gram cholesterol to 32 three-month-old rabbits prevented atherosclerosis in 78% of the animals at the expiration of the 92 day experimental period" (Geriatrics 4: 238 [July-Aug.] 1949).

These findings on the preventive action of choline against arteriosclerosis in the majority of cholesterol-induced lesions in rabbits were also reported by Steiner (Proc. Soc. Exper. Biol. & Med. 38: 231, 1938), Keston and Silbowitz (Proc. Soc. Exper. Biol. & Med. 49: 71, 1942) and Broun, Andrews and Corcoran (Geriatrics 4: 178, 1949).

In the answer to the question there is a further statement, "No report of the use of choline in human arteriosclerosis has been found in the recent medical literature. This is also true for inositol." Herrmann's results (Exper. Med. & Surg. 5: 149, 1947; Ann. West. Med. & Surg. 1: 361, 1947) in patients with coronary arteriosclerosis have been in accord with mine and have shown definite beneficial therapeutic results with choline or inositol. In a recent paper (Am. Heart J. 38:471 [Sept.] 1949) my co-workers and I made the following report:

> *A series of 115 patients with proved coronary thrombosis and myocardial infarction were treated with choline after recovery from the immediate attack for periods of one to three years. These patients were compared with 115 control patients admitted alternately with the same diagnosis, who did not receive choline. The oral dosage of choline averaged 12 Gm. daily. It was taken for one year in 52 cases, for two years in 35 cases and for three years in 28 cases. In this series the subsequent mortality rate of patients who had suffered an acute coronary thrombosis with myocardial infarction appeared to be significantly reduced by the treatment with choline. These studies suggest that the lipotropic agent choline may be of value in the treatment of coronary arteriosclerosis and would appear to merit further trial and observation.*

Lester M. Morrison, M.D., Los Angeles.

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SOME TRENDS IN OTOLARYNGOLOGY

Chairman's Address

HENRY B. ORTON, M.D.
Newark, N. J.

Canfield[1] stated, "In the years 1935-1940, otolaryngology stood a bit eclipsed by the advent of chemotherapy, the general lack of basic scientific work in the specialty, and the general improvement in the control of infectious diseases which so often found access to the body through the cavities of the head."

Mosher,[2] Richards,[3] Furstenberg[4] and others have emphasized the need for training of otolaryngologists for treatment of parts of the body contiguous with those which now concern them. Many others are also deeply concerned with the limitations of this specialty from various causes. I agree with Richards, "that many changes are taking place in the field of otolaryngology which are becoming of increasingly vital concern to every practitioner of this specialty." This has been especially true since World War II. During the last war the General Surgery Branch was given the responsibility for otolaryngology. This may now be changed; as I understand it, there is to be a physician on the staff of the Secretary of Defense. This person is to be the policy director for the medical services for the Armed Services, and perhaps from now on the situation in regard to otolaryngology may be somewhat better.

Laryngology originally was an offshoot of medicine rather than surgery. Now many surgeons desire this specialty to be under the jurisdiction of surgery. This trend has increased in the past few years. In my opinion services with dual control seldom reach their maximum of efficiency. Specialists in laryngology, otology and rhinology must combat this movement by being adequately qualified and prepared to perform operations on organs contiguous with those which they now treat. Much, therefore, depends on the development of these qualifications by specialists in this field.

Many have believed that otolaryngology has suffered from encroachments, modifications and erosions and by directives from numerous sources. Perhaps it is because the otolaryngologists have permitted this. There can be no doubt that more tonsillectomies are being performed every day by general surgeons, physicians, pediatricians and even obstetricians than by otolaryngologists, and performed, as Richards says, "however skillfully or otherwise."

There are, then, the roentgenologist, plastic surgeon, faciomaxillary surgeon and psychiatrist all taking their share.

Bronchoscopy, a long recognized part of otolaryngology, is being gradually taken over by thoracic surgeons and even those in general medical practice. It is also a fact that a clinical laboratory in one of the large cities is performing endoscopic work. Here again the fault may be that of the otolaryngologists, all of whom did not include bronchoscopy in their preparation for the specialty; in some instances this failure was due to lack of interest or lack of opportunity to do this type of work. Otolaryngologists are better suited for this work because they are trained in working in small fields and have developed monocular vision. Endoscopy is a field in which the thoracic surgeon and the bronchoscopist should work together as a team. The bronchoscopist should be thoroughly prepared by surgical training to treat periesophageal infections, perforations of the cervical esophagus and mediastinal emphysema, all of which may be complications of esophagoscopy and bronchoscopy.

There can be no doubt that chemotherapy has played a definite part in all surgical practice. Whether this is permanent or transitory, time alone will tell. This generation may become so completely sensitized to the drugs that even the bacteria may revolt.

You know, or perhaps some of you do not know, that the pioneers of this specialty were primarily interested in performing general surgical operations while waiting for an opportunity to practice; because of circumstances they later became interested in otolaryngology. The Chairs of bygone days were Nose, Throat and Chest. That heritage of the pioneers must be preserved. The field of otolaryngology is shrinking, and changes are inevitable if one sits idly by and lets them come to pass. This trend cannot altogether be blamed on the surgeons; otolaryngologists must be willing to take some of the responsibility themselves. Perhaps some of this tendency stems from the fact that not too much effort has been made to train men in surgical principles. There is nothing so injurious as the "status quo." The otolaryngologist of the future must be thoroughly trained in the principles not only of surgery but also of protein replacements and metabolism, fluid balance, treatment of shock, blood volume, preoperative and postoperative measures, systemic complicating factors, organic disease and physiologic considerations of

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Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

[1] Canfield, N.: The Present Status of Otolaryngology in the United States Army, Laryngoscope **56:** 693-700 (Nov.) 1946.

[2] Mosher, H. P.: Read before the American Laryngological Association, 1921.

[3] Richards, L. G.: Presidential Address, American Laryngological, Rhinological and Otological Society, 1948.

[4] Furstenberg, A. C.: Read before the Southern Section American Laryngological, Rhinological and Otological Society, 1947.

thoracic surgery. He should also be familiar with thyroid surgery and metabolism, and surgery of neoplasms of the head, neck and salivary glands.

This specialty should be a major one and not secondary—not a subsidiary in the department of surgery. Perhaps otolaryngology should be reclassified to: Department of Head and Neck. This would mean that the future otolaryngologist would expand the present field of the specialty anatomically and by surgical training to include the entire head and neck, including the thyroid gland. There might be some opposition to this from the surgeons. However, papers on thyroid disease and surgery of the thyroid are on record by laryngologists in the *Transactions of the American Laryngological Association* by Mackenty, Rogers, Jarvis, Ingals, Watson, Cohen, Theisen, Barnhill and others.

Not to question the skill of the surgeon, I venture to say that operative procedures pertaining to the head and neck can be dealt with more skilfully from a technical point of view by the otolaryngologist, properly trained, than by the general surgeon. His training in delicate technics and his knowledge of the anatomy of these parts makes him well prepared to deal with conditions affecting the head and neck. With 18 per cent of all malignant growths in the body above the clavicle, the otolaryngologist should be qualified to perform surgical procedures in that field by reason of being more familiar with the area. The otolaryngologist should be doing this major surgical work, including the malignant growths, diverticulums of the cervical esophagus, resections of the neck, facial-maxillary surgery and thyroidectomies. Certainly if parts behind the thyroid are removed surgically, the latter operation should be readily accomplished. However, the preoperative and postoperative care of patients with thyroid conditions is extremely important, and team work with the metabolic service is needed.

The future, a glowing one, lies before the otolaryngologists if they prepare themselves as mentioned. If not, the field will become more and more restricted. Let us break the bonds of narrow satisfaction and courageously attack our responsibilities with foresight, to become broader medical men and better surgeons.

224 Delavan Avenue.

Pancreatic Cysts.—Even to the surgeon the diagnosis of pancreatic cyst presents difficulties as there is nothing pathognomonic about the clinical picture. The symptoms are any combination of the following: abdominal distress varying from vague discomfort to acute pain usually in the epigastrium; anorexia, nausea, vomiting, diarrhea; fever and leukocytosis; and in 61 per cent a palpable mass usually at or above the level of the umbilicus (Brunschwig; Judd, Mattson and Mahorner; Schulte and Emmett). Any one or all of these signs and symptoms may be produced by any of the upper abdominal organs and even by disease above the diaphragm. Diagnosis is further confused by the fact that associated disease of the gallbladder or bile ducts is present in 34 per cent of all cases (Judd, Mattson and Mahorner) not only as an etiological factor in some, but producing symptoms that can also be caused by the cyst. Many of the cysts follow prior attacks of pancreatitis; a certain number occur as the end result of pancreatic hemorrhage due to abdominal trauma and some have been attributed to obstruction of the ampulla of Vater. Therefore, the antecedent history is of considerable importance. In some cases the presence of hypoglycemia is suggestive of the true nature of the illness. —Eric P. Stone, Cushing Veterans Administration Hospital, Framingham, Mass., *The Journal of Urology*, August 1949.

ENDOCRINE SUBSTANCES IN THE TREATMENT OF CANCERS

CHARLES HUGGINS, M.D.
Chicago

The efforts of research toward elucidation of the action of endocrine substances on cells have led to some control of cancers of the hormonal target-organs by medical treatment. Evidently, research is the backbone of the development of medicine. The controlling measures and the key observations on which they are based are the subjects of this paper.

No general nonspecific medication against cancer has been developed as yet, but advances have been made in the medicinal treatment of some rather unrelated tumors in far advanced and disseminated stages. The greatest progress in the chemotherapy of cancer in man has concerned neoplasms of the blood-forming tissues, the thyroid, the breast and the prostate. In 1939 Lawrence and his co-workers [1] demonstrated the beneficial effects of radioactive phosphorus in the treatment of leukemia, and in 1941 the use of nonradioactive medicines in the chemotherapy of carcinoma was introduced from this clinic. Subsequently a number of chemical substances, many unfortunately with considerable toxicity, have been found to benefit patients with neoplasms of the hemopoietic organs. Wide experience by numerous workers has confirmed the demonstration that the sex hormones are able to cause some regression of prostatic and mammary carcinomas. Progress has also been made in the treatment of cancer of the thyroid gland through the use of radioactive iodine.[2] These experiences indicate that the outlook for further control of medicines of other carcinomas is good.

As chemotherapeutic agents the sex hormones have a great advantage over all other medicines used in the treatment of cancer in that they are not toxic; and, if they do no good, at least they do no great or immediate harm to the patient with malignant disease.

CANCER OF THE PROSTATE

Cancer of the prostate occurs predominantly in old men, the incidence following a frequency distribution curve [3] between the ages of 40 and 90 years and the apex being between the ages of 60 and 70 years. Most of the cancers (fig. 1) occur in the posterior lobe [4] of the prostate, a region uninvolved by benign tumors. To deny that cancer can arise in the anterior region of the prostate is to imply an immunity to malignant change in these cells, and present theory holds that any bodily tissue can become neoplastic under the proper

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From the Department of Surgery, the School of Medicine, University of Chicago.

Read in the General Scientific Meeting at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 7, 1949.

Original observations reported in this paper were supported by grants from Mr. Ben May, Mobile, Ala., from the American Cancer Society on recommendation of the Committee on Growth, the National Research Council, and from the Committee for Research in Problems of Sex of the National Research Council.

1. Lawrence, J. H.; Scott, K. G., and Tuttle, L. W.: Studies on Leukemia with the Aid of Radioactive Phosphorus, Internat. Clin. **3**: 33, 1939.

2. Keston, A. S.; Ball, R. P.; Frantz, V. K., and Palmer, W. W.: Storage of Radioactive Iodine in a Metastasis from Thyroid Carcinoma, Science **95**: 362, 1942. Hamilton, J. G.: The Use of Radioactive Tracers in Biology and Medicine, Radiology **39**: 541, 1942.

3. Huggins, C., and Johnson, M. A.: Cancer of the Bladder and Prostate, J. A. M. A. **135**: 1146 (Dec. 27) 1947.

4. Geraghty, J. T., and Boyd, M. F.: cited by Lowsley, O. S.: The Development of the Human Prostate Gland with Reference to the Development of Other Structures at the Neck of the Urinary Bladder, Am. J. Anat. **13**: 299, 1912.

stimulus. However, the origin of prostatic cancer elsewhere than in the posterior lobe is unusual.

Evidence[5] has been presented that the human prostate consists of two functionally different areas, the anterior segment (pars anterior) and the posterior lobe (pars posterior); the administration of estrogen to men with noncancerous prostate glands evokes far greater regression in the anterior than in the posterior region. The occurrence of prostatic calculi, which is essentially a disease of the posterior lobe (fig. 2), substantiates this view concerning the duality of the prostate; although corpora amylacea and calculi can be found in small numbers in the anterior segment, they occur in much greater quantity in the posterior lobe. The functional and neoplastic differences between the posterior and anterior regions of the prostate are as striking as those between the stomach and duodenum.

The natural history of untreated cancer of the prostate has been described. In 485 cases[6] the average duration of life from the appearance of the first symptoms to death was 31 months, and two thirds of the patients in whom metastasis had occurred prior to examination were dead within nine months. In the series of Nesbit and Plumb,[7] the average survival from the time of diagnosis to death was 21.2 months, and the median duration (50 per cent point) was 12 months.

It has now been established that androgen is a component in prostatic neoplasms. The neoplasm has never been observed when castration had been done on the patient early in life, although later castration does not eliminate the disease. Fischman[8] has encountered an important case in this regard: histologically proved adenocarcinoma of the prostate with osseous metastases developed in a man aged 62, who had been castrated about thirty years earlier.

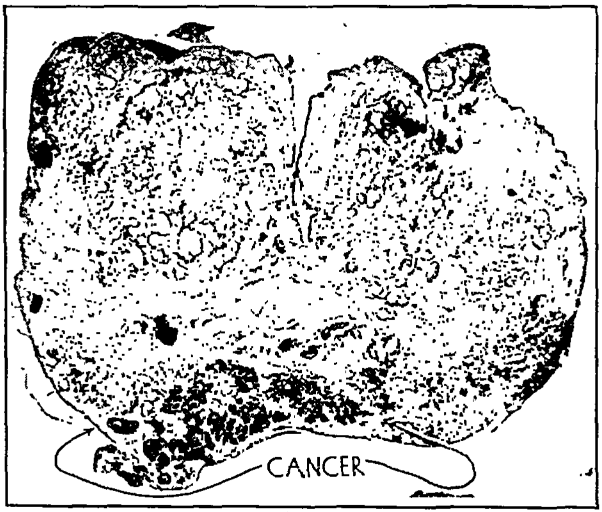

Fig. 1.—Photomicrograph of an equatorial section of a human prostate, showing the occurrence of early prostatic cancer in the posterior lobe and benign tumors in the anterior segment.

John Hunter knew that the prostate of castrated persons was small and inactive. White,[9] having observed the regression of uterine fibroids after oophorectomy, treated a series of patients who had benign prostatic enlargement by orchiectomy; many good results were reported, but this form of operative treatment fell into disuse, largely because of the contemporaneous development of the more acceptable operation of suprapubic prostatectomy.

Antiandrogenic therapy for prostatic cancer emerged from a study of benign neoplasms[10] of the prostate of the dog, the only creature apart from man in which these lesions develop. Both orchiectomy and estrogenic treatment caused prompt and decided regression of these tumors, and this therapy has since been adopted as standard veterinary practice.

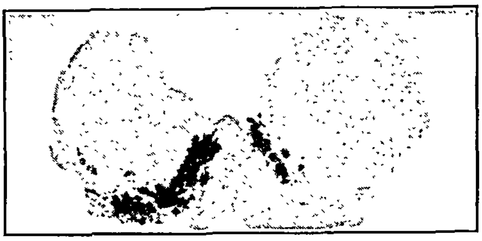

Fig. 2.—Roentgenogram of an equatorial section of a human prostate, *showing the accumulation of calculi in the posterior lobe, the region* where cancer commonly develops.

Androgen greatly increases the growth of human, prostatic cancer, while in favorable cases orchiectomy or estrogen therapy ameliorates the disease. This effect of endocrine substances was proved by studying the acid and alkaline phosphatases of the blood serum at close intervals; levels of these enzymes[11] are frequently increased in the blood when cancer of the prostate has metastasized.

Antiandrogenic measures effect an improvement in the disease in about 90 per cent of patients treated by excison of the testes or by administration of estrogens,[12] for example, 5 mg. diethylstilbestrol daily. If the lesion is confined to the prostate or nearly so, total prostatectomy by the perineal route is indicated; otherwise, for most patients, orchiectomy is advised as soon as the diagnosis of advanced cancer has been established. This minor operative procedure eliminates the testicular androgenic component and has yielded slightly better results than the estrogenic treatment.

Within two years in 55 per cent of the cases in the series the remission induced by antiandrogenic measures had ended and was followed by relapse; this corresponds to the experience of Nesbit and Cummings[13] in a larger series. Moreover, 75 per cent of the treated patients had died within five years. After eight to ten years, 4 of the 20 patients (20 per cent) in the first series[12] are alive and in good condition. In most instances the treatment merely provides palliation for short periods of time, but in a small number of patients, mostly those in the older age group, the improvement is extensive and prolonged.

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[5] Huggins, C., and Webster, W. O.: Duality of Human Prostate in Response to Estrogen, J. Urol. **59**: 258, 1948.

[6] Bumpus, H. C., Jr.: Carcinoma of the Prostate, Surg., Gynec. & Obst. **43**: 150, 1926.

[7] Nesbit, R. M., and Plumb, R. T.: Prostatic Carcinoma, Surgery **20**: 263, 1946.

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[9] White, J. W.: The Present Position of the Surgery of the Hypertrophied Prostate, Ann. Surg. **18**: 152, 1893.

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None of the measures available at present is of great value in the treatment of patients in relapse after antiandrogenic therapy. Frequently irradiation of the sacral region will relieve sciatica. Often the supplemental administration of diethylstilbestrol after orchiectomy will inhibit the tumor slightly. Doses of 5 to 10 mg. of this drug daily have been more effective than larger doses, such as 50 to 100 mg. daily.

The side effects of orchiectomy are hot flushes; these episodes can usually be abolished by the administration of diethylstilbestrol, 1 mg. daily for two weeks. With both orchiectomy and estrogenic treatment sexual impotence is the rule, although there are exceptions.

The administration of estrogen in effective amounts causes testicular atrophy and mammary hypertrophy. Growth of the breasts can be so extensive that lactation may be induced, as illustrated in the following case.

W. N., aged 64, had carcinoma of the prostate with osseous metastases, for which he was treated by a permanent suprapubic cystotomy in 1941. Diethylstilbestrol, 20 mg. daily, was given orally for two years beginning September 1942. In September 1944, 25 mg. (500 international units) of prolactin[14] was injected daily for five days, and at the end of this time creamy milk could be expressed from both breasts. Orchiectomy and removal of the cystostomy tube were carried out September 6, when administration of estrogen was discontinued; both incisions healed promptly. Since then the patient has been clinically well but has continued to lactate, a large drop of milk being easily expressed from each breast at frequent intervals.

The mammary stimulation by estrogen may be so great that the breasts sometimes undergo malignant change,[15] in most instances bilateral. In these cases the carcinostatic effects of estrogen on the prostate have been carcinogenic with respect to the breast. The induction of mammary cancer in women by estrogen therapy is believed to be extremely uncommon; clearly men are more vulnerable than women in this regard.

MAMMARY CANCER

Although androgen and estrogen are the only endocrine substances known to act on the prostate, growth of the breast is stimulated in addition by progesterone and by pituitary hormones, certainly prolactin and possibly mammotropin; the breast, therefore, is a more complex structure than the prostate and is acted on by a larger number of variables. For the same reasons, the physiology of the mammary gland is less well understood than is that of the prostate, and the treatment of cancer of the breast has been more empiric and hence less efficient.

Lathrop and Loeb[16] showed that in strains of mice with a high incidence of cancer the rate of mammary cancer could be reduced to close to zero when the ovaries were removed during early sexual maturity. When the mice were spayed at 5 to 6 months of age the incidence of cancer was lowered but not to such an extent as in earlier castration, but in mice with oophorectomy at 10 months the tumor incidence was the same as in unoperated litter mates, or nearly 100 per cent. Lacassagne[17] succeeded in producing mammary cancer in male mice of high-tumor strains by giving them injections of estrogen for long periods. Nathanson and Andervont[18] administered androgen to mice of the C_3H strain, and the incidence of mammary cancer in the untreated controls was 100 per cent; mammary cancer developed in only 30 per cent of the mice that had been given injections. Androgen had no effect on established tumors of this strain. Herrell[19] found that the incidence of mammary cancer was 10 times greater in normal women than in women who had undergone oophorectomy, the time of castration being a factor here as it was in Loeb's experiments on mice.

CANCER OF THE MALE BREAST

Cancer of the male breast[20] comprises about 1 per cent of all cancer of the breast, and both the pathologic and clinical course approximate that in the female. The effects of hormonal modification by orchiectomy are often impressive.

Farrow and Adair[21] reported that androgen stimulated the growth of the tumor, but in 1 case orchiectomy caused some regression. In a series of 6 patients[22] castration caused regression of the tumor and its metastases in 3; the relief of pain and the clinical improvement in some cases was dramatic. Subsequently it was reported[23] that 2 of these 6 men who had extensive mammary cancer were alive and without evidence of disease more than five years after orchiectomy. Treves[23] commented that the clinical regression in inoperable carcinoma of the male breast after orchiectomy was analogous to the regression of similar lesions in prostatic cancer.

CANCER OF THE FEMALE BREAST

Oophorectomy.—Beatson[24] described improvement after removal of the ovaries in 2 of 3 young women with advanced mammary cancer. He stated, "I am satisfied that in the ovary of the female and the testicle of the male we have organs that send out influences more subtle, it may be, and more mysterious than those emanating from the nervous system." Lett[25] collected 99 cases in which oophorectomy had been performed and found improvement in 23 per cent; if he excluded women over 50 years of age the figure rose to 41 per cent.

Largely because of convenience, oophorectomy was then replaced by irradiation of the pelvis, but with inferior results. Ahlbom[26] found that in advanced cancer treated solely by pelvic irradiation the treatment had no favorable effect. G. W. Taylor[27] treated 50 patients, mostly those with advanced disease, by artificial menopause. Irradiation of the pelvis was followed by temporary improvement in about one third of the cases, the most striking benefit apparently occurring in cases with osseous metastasis.

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[26] Ahlbom, H.: Castration by Roentgen Rays as an Auxiliary Treatment in the Radiotherapy of Cancer Mammae at Radiumhemmet, Stockholm, Acta radiol. **11**: 614, 1930.

Comment.—Oophorectomy has produced amelioration of the disease in many young women with advanced mammary cancer; the improvement is usually temporary but occasionally is prolonged. Studies of the cell structure of the tumors have not been helpful in predicting which patients will react favorably. Ovarian irradiation is less certain, more temporary and more capricious in its benefit than surgical excision of the ovaries.

Androgen.—Although improvement in a few cases[28] of advanced cancer of the female breast following androgen administration had been seen earlier, the chief impetus in establishing this method of treatment came from the Adair school. Farrow and Woodard[29] treated 33 patients with testosterone propionate for brief periods, and about half the patients experienced relief of pain; in 3 women there was a greatly increased serum calcium level. Adair and Herrman[30] treated 11 patients who had advanced cancer of the breast with large doses of testosterone propionate (about 2 to 4 Gm. in three months); 4 patients, 1 with involvement of the soft parts and 3 with osseous metastasis, showed remarkable improvement. S. G. Taylor III and co-workers[31] found that administration of testosterone propionate, 300 to 700 mg. each week, caused as its first effect relief of pain and sometimes regression of both the primary tumor and visceral metastases. There was improvement in 11 of 17 patients in the Taylor series of cases with osseous involvement; however, in 5 patients congestive heart failure developed. Masculinization (hirsutism) develops as a side effect of androgen therapy.

The Therapeutic Trials Committee of the American Medical Association (Council on Pharmacy and Chemistry) has recently reviewed[32] the data obtained from the treatment with testosterone propionate of 285 patients who had mammary cancer associated with metastasis. There was no appreciable difference in the response of patients in various age groups from 25 to 79 years. Approximately 62 per cent of these patients experienced subjective relief, while objective improvement was seen in lesions of the soft tissue and the bones in approximately 1 of 5 patients. No significant difference in response was observed by the use of doses between 150 to 300 mg. weekly.

Comment.—The ameliorating effect of androgen in both young and old patients is definite, but the mechanism of action is unknown; the best results apparently occur in patients with osseous metastasis. The effects at best are temporary; masculinization develops, and hypercalcemia and heart failure are frequently encountered. I have observed the optimal response to androgenic treatment following the daily intramuscular injection of 25 mg. of testosterone proprionate.

Estrogen.—Haddow and co-workers[33] demonstrated that estrogen administered to certain patients with advanced mammary cancer caused regression of the soft lesions and also the osseous involvement: there was temporary retardation or regression, often striking in nature, in 16 patients in a series of 40. Healing of carcinomatous ulcers, decrease in the size of involved lymph nodes as well as in the primary tumor and regression of hepatic and pulmonary metastasis were observed in about half the patients. These observations have been confirmed.[34] As a side effect uterine bleeding occurs often and nausea develops occasionally. S. G. Taylor III[31] expressed his belief that the oral administration of 3 mg. of diethylstilbestrol daily is an effective dose.

About 25 per cent of 144 patients treated by estrogen therapy for metastases from mammary cancer maintained subjective and objective improvement for nine months or longer.

Comment.—Clearly implicated as a causative agent in the mammary cancers of mice, estrogen has a temporary regressive effect in advanced mammary cancer in older women, although the mechanism of the inhibitory effect is unknown. In younger women growth of the tumor may be accelerated through its use. It is not known whether those patients who respond favorably to estrogenic treatment will also respond to the administration of androgen.

MISCELLANEOUS TUMORS

Some activity in inhibiting cancer of the bladder by antiandrogenic measures has been reported, but the use of these agents is empiric. Haddow and associates[33] treated 30 patients with advanced malignant disease other than cancer of the breast and prostate and found partial regression in only 1 case, which happened to be of carcinoma of the bladder. Shivers[35] treated 2 patients who had advanced infiltrative cancer of the base of the bladder by orchiectomy and reported definite alleviation of subjective symptoms and an equivocal regression in the growth of the tumor.

Comment.—It is important in evaluating the treatment of vesical neoplasm to rule out prostatic carcinoma where the beneficial results of antiandrogenic treatment have been demonstrated. I am of the opinion that estrogen has a slight but definite activity against cancer in a wide variety of diverse neoplasms, especially in older persons; in this clinic some temporary and partial amelioration has been observed in cancer of the stomach, bladder and colon, and in hypernephroma. The evidence of improvement in these miscellaneous tumors is clinical; to date the proof has not been rigorous or compelling.

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CONCLUSION

Modification of the internal environment of the host by medication with substances occurring normally in the body or with synthetic compounds having physiologic activity similar to natural products is capable of effecting a long-continued regression of several widely disseminated carcinomatous processes in man.

MANAGEMENT OF PATIENTS WITH TETANUS

Some Clinical Experiences with Various Muscle-Relaxing Agents

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It may be said that the basic treatment of tetanus is to prevent the extension of the disease and to neutralize the toxins already present. However, at the time the diagnosis of tetanus becomes apparent, certain dangerous and sometimes fatal symptoms are already established. Rigidity and spasm of muscle must be controlled in order to prevent death due to either exhaustion or respiratory failure.

In the past various agents, such as magnesium sulfate, the barbiturates, chloral hydrate and tribromoethanol (avertin®), have been used. In more recent years muscle-relaxing agents such as various preparations of curare and curare-like drugs have been tried.

In Charity Hospital at New Orleans the Anesthesia Department is consulted in cases of tetanus in reference to resuscitative measures and the use and administration of muscle-relaxing agents and sedative drugs such as tribromoethanol. From July 1, 1947 to the time of writing we have been consulted in regard to, or have treated for control of muscular spasm, 70 patients with tetanus. These patients ranged in age from 8 days to 93 years, and the tetanus was of various degrees of severity.

PROCAINE HYDROCHLORIDE

Because of recent interest in the intravenous use of procaine hydrochloride in various diseases in which spasm of muscle played a part, we became interested in its possible use in the treatment of tetanus.

It is believed that peripherally procaine affects the nerve endings, both sensory and motor, so that their action is diminished. This should produce vasodilatation and muscular relaxation and should also decrease reflex excitation from external stimuli. We know that intravenously given procaine acts centrally as a stimulant, and it was immediately apparent, in view of the hyperirritable character of these patients, that this central stimulation must be counteracted with some sedative in order that we might administer an amount of procaine hydrochloride sufficient to produce peripheral effects.

In general, our procedure was as follows: The patient was given phenobarbital either intramuscularly or orally in doses of 1 to 3 grains (0.06 to 0.19 Gm.). An infusion of 0.1 per cent solution of procaine hydrochloride in 5 per cent dextrose in distilled water was started intravenously at the rate of thirty drops per minute. The infusion was allowed to run at this rate for ten minutes, and then the rate was gradually increased until excitement or hyperirritability of the patient appeared or until the infusion ran uninhibited at a rate of one hundred and eighty drops per minute. A solution of thiopental sodium (pentothal sodium®), either 2½ per cent or less, was kept in readiness. When signs of toxicity or hyperirritability occurred, administration of the procaine was reduced in rate or stopped completely for a period of time. If the symptoms of toxicity did not disappear, thiopental sodium was administered intravenously in the amount necessary to control the restlessness and excitement of the patient. When it became necessary to administer thiopental sodium almost continuously, the infusion of procaine hydrochloride was discontinued. The amount of procaine hydrochloride given to various patients ranged from 100 mg. to 1 Gm., and the amount of thiopental sodium ranged from zero to 500 mg. The time required for treatment ranged from thirty minutes to two and one-half hours. This treatment was given on an average of once daily. Supplemental sedation with phenobarbital, amobarbital sodium (amytal sodium®) or tribromoethanol was given between these treatments. Some relaxation of muscle and diminution in sensitivity to stimulation was produced with this combination of intravenously given procaine and barbiturates. However, this effect was not long lasting and soon required supplemental sedation. When thiopental alone was given intravenously the effect wore off in an average of thirty minutes.

PROCAINE WITH OTHER AGENTS

It was noted that tribromoethanol in doses of 50 mg. per kilogram of body weight, given as supplemental sedation between treatments with procaine, produced muscular relaxation which in many instances lasted longer than that produced by the procaine-thiopental combination. It was then decided to use a combination of tribromoethanol and procaine. The patients were given 50 mg. per kilogram of body weight of tribromoethanol rectally, and approximately thirty minutes later the infusion of procaine hydrochloride was started. In general it was found that the patients tolerated larger amounts of procaine administered at a more rapid rate, and required a smaller amount of thiopental to counteract the symptoms of procaine toxicity. In many instances the sedation and muscular relaxation produced by this combination lasted twice as long as that produced by tribromoethanol alone.

Of the 25 patients treated with procaine and thiopental or procaine and tribromoethanol, 5 died. One patient died as the result of a mucous plug in the tracheotomy tube. Two deaths were due to pulmonary complications. Two patients died rather suddenly, probably because of respiratory obstruction. Both had copious secretions, and it was impossible to keep the airway completely free. It is noteworthy that in neither of these 2 cases had a tracheotomy been performed.

In all 25 cases we were able to control the rigidity and spasm of muscle with procaine and thiopental or procaine and tribromoethanol and supplemental sedation with phenobarbital and/or tribromoethanol.

In general we reached the following conclusions as to the intravenous use of procaine in relieving or controlling the rigidity and spasm of muscle in tetanus:

From the Department of Anesthesiology, Charity Hospital of Louisiana.

Read in a Panel Discussion on Intravenous Procaine before the Section on Anesthesiology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

1. Procaine used alone is not effective, and its stimulating action on the central nervous system must be overcome with a depressant of the central nervous system.
2. The combination of procaine and tribromoethanol gives better results than the combination of procaine and thiopental.
3. Muscular relaxation and sedation produced by the combination of tribromoethanol and procaine lasts longer than that produced by tribromoethanol alone.
4. Respiratory depression is less when tribromoethanol and procaine are administered than when the former is administered alone.
5. The intravenous administration of procaine to these patients is not without hazard and requires constant attention and careful observation.

BARBITURATES

Since the intravenous administration of procaine in these cases is not without disadvantages and is not entirely satisfactory, we also tried other drugs or combinations of drugs. We have reviewed 22 cases of tetanus during this same period in which patients were treated with phenobarbital and amobarbital sodium. Many of these cases were mild. The muscular rigidity and spasm was not severe, and the patients required only mild sedation to control their restlessness. However, other cases proved severer than was originally thought, and 4 of the 7 deaths in this series of cases occurred as a result of sudden sustained tetanic spasm with respiratory arrest, in which attempts at artificial respiration were ineffective. The other 3 deaths occurred in paients with cardiac disease, 2 of whom were aged and were practically moribund when first seen.

We concluded that phenobarbital is a good sedative in these cases but is ineffective in controlling the muscular rigidity and spasm of even moderately severe tetanus. Amobarbital sodium given intravenously is effective in relieving an acute tetanic spasm but is not as effective as tribromoethanol or a combination of the last-mentioned agent and procaine in the general control of rigidity and spasm of muscle in tetanus.

TRIBROMOETHANOL

We have reviewed 10 cases of tetanus managed in this hospital in which tribromoethanol was used without the intravenous administration of procaine. In all these cases the patients received phenobarbital, but tribromoethanol was relied on for control of the muscular rigidity and spasm. A dose of 50 mg. of the drug per kilogram of body weight, administered rectally. was found to be effective. This was given as often as needed, the average interval being three to four hours in severe tetanus. Four deaths occurred in this series, only 1 of which was due to tetanic spasm. It was later found that this patient had not received tribromoethanol for ten hours prior to death. It was concluded that the drug is effective in controlling rigidity and spasm of muscle in tetanus. However, its administration is accompanied with varying degrees of respiratory depression in the patient. Also, rectal irritation occurred in about one third of the cases after repeated administration of the drug.

Three cases of tetanus were reviewed in which chloral hydrate was used as a sedative. In 2 of these cases the patients died with tetanic spasms. The third patient survived. Fairly severe respiratory depression accompanied the doses of chloral hydrate used in all these cases.

CURARE

From time to time various investigators have reported on the use of curare in the treatment of tetanus. In 1947 Adriani and Ochsner[1] reported 5 cases of tetanus treated in this hospital with *d*-tubocurarine chloride (intocostrin®). In general their results were unsatisfactory. They found that relief from spasm was not obtained until the dose which caused almost complete curarization was given; the response was fleeting, and respiratory depression and obstruction were avoided with difficulty. Recently there have appeared in the literature reports on the use of curare in oil in the treatment of tetanus with good results. We have used *d*-tubocurarine chloride in peanut oil with myricin in 2 cases in children. In this preparation each cubic centimeter contains 27 mg. of *d*-tubocurarine chloride pentahydrate, equivalent to 180 units of the drug, and 48 mg. of myricin suspended in peanut oil. In the first case 0.25 cc. was given initially. This did not control the spasms, and the next day 0.5 cc. was given intramuscularly. However, this dosage likewise failed to control the spasms. It was then considered advisable to change the treatment rather than to continue seeking an effective dose of curare in oil, and the patient was given tribromoethanol. The condition was severe, and the patient later died of respiratory complications.

The second patient was given 0.5 cc. of the curare preparation in oil initially, but this was not effective. The next day 1 cc. of the drug was given intramuscularly. This was effective for thirty-six hours. At this time a second injection of 1 cc. was given. Six hours later the patient had complete muscular paralysis except for ineffective diaphragmatic movements. She was placed in a respirator for one and one-half hours. At the end of this period she had resumed normal respiration. She recovered, receiving only one subsequent injection of 0.5 cc. of curare in oil.

From this small series we concluded that the results using this preparation were not always predictable and that treatment by this method had many of the disadvantages of curare therapy by the multiple dose method as well as the disadvantage of causing massive overdosage.

MEPHENESIN

Recently we have used a preparation of mephenesin (3-ortho-toloxy-1,2-propanediol) called tolserol.® This is a curare-like compound and has previously been used as a relaxing agent in anesthesia and in neurologic diseases characterized by muscle spasm or increased muscle tonus. It has been reported to give good abdominal relaxation without intercostal paralysis. We used this preparation in the form for oral administration, each tablet containing 250 mg. In all except the exceedingly mild cases we have a stomach tube in place for feeding. This provides an easy, nonirritating route for the administration of the drug. So far 8 patients with tetanus have been treated with this preparation. They ranged in age from 22 months to 68 years. Each received for sedation phenobarbital in doses ranging from ½ to 2 grains (0.03 to 0.13 Gm.) given once, twice or three times daily. Mephenesin was given in doses ranging from 62.5 to 750 mg. in children and up to 3,500 mg. in the 1 adult patient. This was given as often as every two hours in some cases, but the average interval was about four hours. On the whole this group of cases presented only moderately severe signs and symptoms of tetanus. However, the first case in which mephenesin was used was especially severe, and results with this drug proved unsatisfactory. The doses used either were ineffective or produced severe respiratory depression. Mephenesin was discontinued and treatment was continued with tribromoethanol. After a stormy course the patient recovered. This was the only case of severe tetanus in which this form of treatment was attempted; therefore we are unable to give an opinion as to its efficacy in this type of case. In all of the other 7 cases the control of muscular rigidity and spasm was satisfactory with phenobarbital and mephenesin. We did not attempt to keep these patients completely relaxed at all times. Profound sedation is undesirable because of respiratory depression and the difficulty in keeping the airway free of secretions. Phenobarbital or mephenesin, or both, were given as needed to control restlessness and spasm. All these patients had tracheotomy performed early in the course of the disease, and the 1 patient with extremely severe tetanus required insertion of a bronchoscope through the tracheotomy once to relieve atelectasis. All patients survived. Only 1 adult was treated with mephenesin, and he did not respond as well as did the children.

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[1] Adriani, J., and Ochsner, A.: Some Observations on the Use of Curare in the Treatment of Tetanus, Surgery 22: 509, 1947.

Hematuria and abdominal distention has been reported with the intravenous administration of this drug. We used the oral route of administration, and neither hematuria nor abdominal distention was observed in any instance. Allergic or toxic reactions to the drug were not observed.

CONCLUSIONS

From this group of cases our conclusions were as follows:

1. The combination of phenobarbital and tolserol® is exceedingly satisfactory in controlling the muscular rigidity and spasm in cases of moderately severe tetanus.

2. With this form of treatment, it is less difficult to keep the respiratory passages free of secretions. Pulmonary complications were observed in only 1 of these 8 cases.

From these 70 cases of tetanus which we have reviewed, certain general observations may be made:

1. Cases of tetanus vary widely in many respects. Therefore, true evaluation of results from various forms of therapy is extremely difficult.

2. All cases of tetanus require constant attendance and careful observation. The course of the disease may change abruptly at any moment.

3. In all cases of tetanus, except the mildest form in which the diagnosis is actually questionable, early tracheotomy should be performed. This eliminates the possibility of upper respiratory obstruction and facilitates the elimination of irritating and obstructing secretions from the lower respiratory passages. In many cases the amount of sedation required in these patients is decidedly reduced following tracheotomy.

4. The control of rigidity and spasm of muscle is essential. In this institution various agents have been used, and some have given better results than others. However, none of the agents proved entirely satisfactory, and all have certain disadvantages.

INTRAVENOUS USE OF PROCAINE IN THE MANAGEMENT OF ARTHRITIS

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Arthritis and rheumatic disorders are second on the list of the most commonly disabling afflictions.[1] Not only does arthritis produce economic hardship by reason of its disabling characteristic, but the multitude of unsatisfactory therapies with which the physician attempts to treat this condition often results in a feeling of helplessness and even hopelessness on the part of the patient.[2] Since to the patient relief of pain and spasm is of prime importance, to the physician the choice of a method of treatment which will produce satisfactory alleviation of pain is one of the first steps in the management of arthritis. It is the purpose of this report to present a method which has produced a sufficient number of satisfactory results in the relief of pain in arthritic conditions to warrant further application and investigation.

In several previous reports we have indicated the value of procaine hydrochloride administered intravenously for the control of pain in traumatic and inflammatory conditions.[3] Recently we supplemented and reevaluated our observations in arthritic conditions in an interim report.[4] During the past three years we have treated and observed 250 patients afflicted with arthritis, who received 1,894 infusions of procaine hydrochloride intravenously, with no mortality or morbidity.

THE PAIN SYNDROME

It is becoming increasingly apparent that the nature of the arthritic process is dependent to a certain extent on a neuroendocrine imbalance. This imbalance no doubt involves several factors of the neuroendocrine system rather than a single isolated dysfunction.[5]

Articular cartilage itself is insensitive. The pain is due to the secondary changes within the periarticular structures and capsule. Moore has shown experimentally that when a stimulating agent reaches the capillary bed in effective strength pain results.[6] Whether pain arises from the stimulation of sensory nerve endings in the intima of arteries or capillary endothelium[7] or from the stimulation of tissues adjoin-

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Read in a Panel Discussion on Intravenous Procaine before the Section on Anesthesiology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

[1] Bortz, E. L.: The Chronic Invalid, J. A. M. A. **138**:745 (Nov. 6) 1948.

[2] Wolff, E.: Trauma and Arthritis, Indust. Med. **17**:41, 1948.

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ing the capillary bed[6] is still a matter of controversy. It is generally agreed that the dysfunctioning capillary leads to local edema, hypoxia and hydrogen ion changes and that, when metabolites accumulate within the tissues, pain becomes noticeable or often unbearable. We believe that when procaine hydrochloride is administered intravenously it reaches the dysfunctioning capillary unit and, by anesthetizing the irritated nerve endings, breaks the reflex arc pattern, thus resulting in the return of normal circulation.[8]

The hyperactivity of the vasomotor apparatus in chronic arthritis is indicative of irreversible pathologic changes in the autonomic nervous system—specifically, the sympathetic ganglion.[9] Kuntz has shown histologically the changes produced,[10] but all these changes are primarily the result of excessive peripheral nervous stimulation; if the peripheral process is subdued, there may be a reversal of the degenerative process.

Another possible action of procaine to be considered is its apparent ability to inactivate cholinesterase, thus allowing for the more sustained action of acetylcholine in the maintenance of the humoral balance.[11] Although Brodie, Lief and Poet concluded that the hydrolysis of procaine is unusually rapid,[12] Glick expressed his belief that procaine is completely unattacked by the esterases[13] but does undergo a small degree of nonenzymatic hydrolysis.[14] Soehring has stated that procaine and its split product diethylaminoethanol provide a special form of sensibilization to epinephrine and acetylcholine.[15] Bergmann was of the opinion that procaine will inhibit adrenal secretion induced in the hypoglycemic state of hyperinsulinism.[16]

METHOD OF ADMINISTRATION

The action of any drug depends on dosage, ratio of absorption or distribution to the rate of destruction or excretion, the physical-chemical properties of the drug and the peculiar sensitivities of the particular patient.[17] Early in our investigations we concluded that the total amount of procaine hydrochloride to be given intravenously at any one time should not exceed 4 mg. per kilogram of body weight. Since procaine is split rapidly into para-aminobenzoic acid and diethylaminoethanol by procaine esterase[18] and since procaine or para-aminobenzoic acid cannot be detected in the blood stream twenty minutes after a rapid intravenous injection, we concluded that in order to maintain a satisfactory blood level the infusion should be given in twenty minutes. Therefore we proposed the "procaine unit": 4 mg. of procaine hydrochloride per kilogram of body weight to be administered in twenty minutes.[19] Clinical experience indicated that a 0.1 per cent (1 : 1,000) solution of procaine hydrochloride in isotonic sodium chloride solution would be tolerated by most patients. In hypertensive patients 5 per cent dextrose in water is substituted for the isotonic saline solution.

For example, a 70 Kg. patient would receive 280 mg. of procaine hydrochloride, or 280 cc. of a 0.1 per cent solution in isotonic sodium chloride solution in twenty minutes or 14 cc. per minute for twenty minutes. For better control and easier administration, in preference to the ordinary infusion apparatus, we use a rotameter,[19] an instrument which accurately measures the rate of flow of intravenous fluids.[20]

In the preparation of our solutions, we add 5 cc. of a 20 per cent solution of procaine hydrochloride[21] to a liter of diluent. Recently, we have used a prepared 0.1 per cent solution of procaine hydrochloride in isotonic sodium chloride solution with satisfactory results.[22] The use of the crystalline procaine hydrochloride should be avoided, for one can never be certain of the complete dissolution of the drug.

Premedication such as a barbiturate is not given to our patients. In over 4,000 infusions we have found no evidence of sensitivity to procaine or addiction to the drug. As stated previously, we have encountered no morbidity or mortality.

Table 1.—*Results of Treatment of 250 Patients with Intravenous Infusions of Procaine Hydrochloride Solution.*

	A Rheumatoid Arthritis	B Arthritis Due to Trauma	C Degenerative Diseases of the Joints
Number of cases	54	42	154
Number of infusions	526	175	1,193
Average number of infusions	9.8	4.2	7.1
Results			
Good	39	40	120
Fair	9	1	20
Poor	6	1	14
Increased Mobility			
Positive	42	41	128
Negative	12	1	26

In this form of therapy, the sole guide to the number and frequency of infusions to be given is the degree or recurrence of pain. Some patients were treated daily and others weekly, or on the return of pain. Procaine therapy by the intravenous route seems to have a cumulative effect. However, the general condition of the patient must also be considered in determining the frequency of infusions.

CLINICAL DATA

This report is based on results obtained in 250 patients with arthritis who received a total of 1,894 infusions of procaine hydrochloride. These patients have been treated in the course of the past three years, and the majority have been under observation for at least one year after the cessation of therapy. Three patients are still receiving active treatment. Classification as to the type of arthritis is based on the history, physical examination and laboratory investigation. Classification in accordance with the suggestion of the American Rheumatism Association[23] is: (1) rheumatoid arthritis; (2) arthritis due to direct trauma, and (3) degenerative joint disease (osteoarthritis).

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[20] Flowrator is the trade name for the rotameter manufactured by Fischer and Porter, Hatboro, Pa.

[21] The procaine hydrochloride used was supplied as novocain® by the Department of Medical Research, Winthrop-Stearns, Inc., New York. It is now available in special 1 : 1,000 solution.

[22] Procaine, Hydrochloride 0.1 per cent in Isotonic Sodium Chloride Solution was supplied by Abbott Laboratories, North Chicago, Ill.

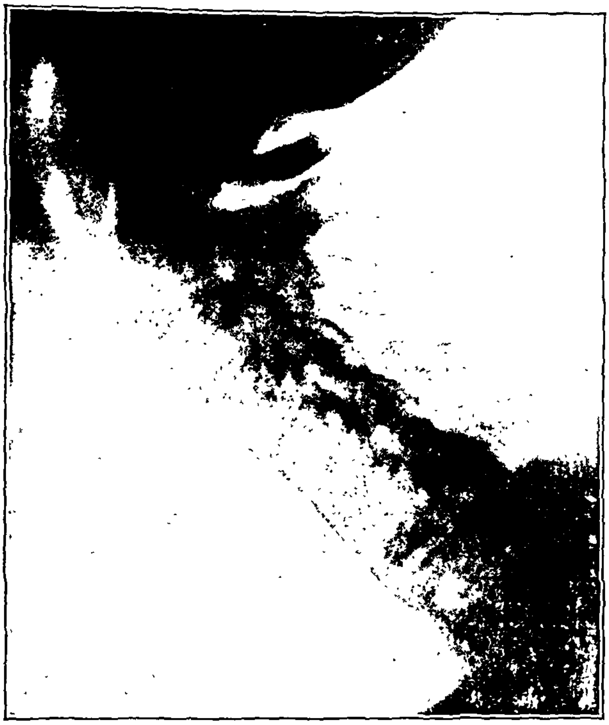

Fig. 1.—Rheumatoid arthritis, patient T. H. J. The lateral view of the cervical spine shows smooth fusion of the anterior edges of the four lower vertebrae, producing almost a block spine. The joint spacing is vague and slightly diminished.

Rheumatoid Arthritis.—Fifty-four patients with rheumatoid arthritis received a total of 526 intravenous infusions of procaine. The largest number of infusions given to a patient was 96 and the smallest, 1. The average number of infusions per patient was 9.8. All persons in this category had been incapacitated for eight to fifteen years prior to the institution of treatment.

Table 1 *A* outlines our results. Although we first reported equivocal results in this category,[24] by intensive therapy we achieved satisfactory results. Daily infusions of procaine and ascorbic acid (vitamin C), supplemented by parenteral intramuscular injections of 500 mg. of ascorbic acid for two weeks usually produce sufficient relief of pain and spasm to allow physical therapy to be instituted. As pain decreases muscular spasm diminishes, overcoming in many instances the flexion contractures so frequently observed in these patients. Rehabilitation of the patient is of utmost importance.

We believe that this form of therapy should be used in the treatment of this type of arthritis, even though the results obtained by its use are not as spectacular as those obtained in the other types. Of the 6 patients who had no relief of pain, 4 also had ankylosing spondylitis of the Marie-Strümpell type. The 12 patients who did not increase their mobility included the 4 already mentioned and 8 with almost complete ankylosis.

The following case is illustrative of our series:

History.—T. H. J. is an electrical engineer aged 52 who was first seen by us Sept. 27, 1947. His past history was that of a gradual onset of pain in the back about fifteen years prior to admission. Within a few years of the onset the back became extremely rigid, and he was unable to bend, turn his head, or sit in a chair for any great period of time. Despite this handicap he was able to do his work. In 1945 pain and swelling of the left knee was noticed; within a few months the right knee and both ankles became painful and swollen.

Physical Examination.—Physical examination revealed an adult cooperative man, who was able to get about with the aid of two canes. The entire spine was typical of the ankylosing spondylitis found in rheumatoid arthritic spondylitis (Marie-Strümpell). There was no mobility of the spine in any direction. Figures 1 and 2 show the radiologic changes apparent at the time of examination in the cervical and lumbar regions. Both knees were swollen, the right more than the left. Tenderness was generalized, and there was decided limitation of motion. Both ankles were swollen and tender. The heart was normal in size, shape, position and sounds. The blood pressure was 120 systolic and 80 diastolic. The lungs were clear to percussion and auscultation; mobility of the costal cage was severely restricted. Radiographic examination of both knees revealed conditions typical of rheumatoid arthritis (fig. 3).

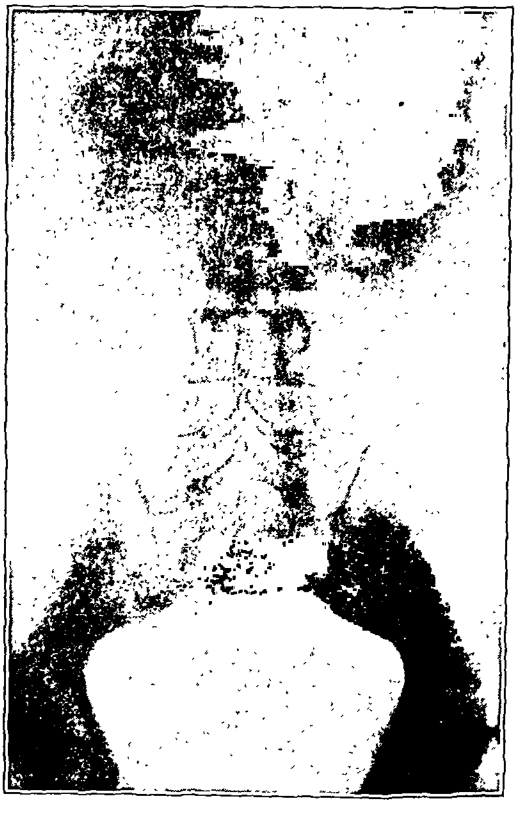

Fig. 2.—Rheumatoid arthritis, patient T. H. J. Anteroposterior view of the lumbar spine reveals a relatively free portion of the spine, with the exception of the first and second lumbar vertebrae, where there is evidence of smooth heavy exostoses. Both sacroiliac articulations are obliterated by the disease and show increased density.

Laboratory Procedures.—Urinalysis: Reaction of the urine was acid; the specific gravity was 1.022. There was no albumin or sugar. Microscopic examination revealed occasional red blood cells and a few white blood cells, most of them in mucous shreds, with occasional epithelial cells. The uric acid determination was 3 mg. per hundred cubic centimeters of blood.

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Blood Examination: The hemoglobin amounted to 71.6 per cent, or 11 Gm. (Newcomer's method). There were 4,470,000 red blood cells and 12,000 white blood cells. The color index was 0.81. The differential count was 54 per cent polymorphonuclear neutrophils, 1 per cent eosinophils, 39 per cent lymphocytes and 6 per cent mononuclears. The sedimentation rate in one hour was 65 mm. (Westergren). (The normal rate in one hour is 0 to 15 mm.)

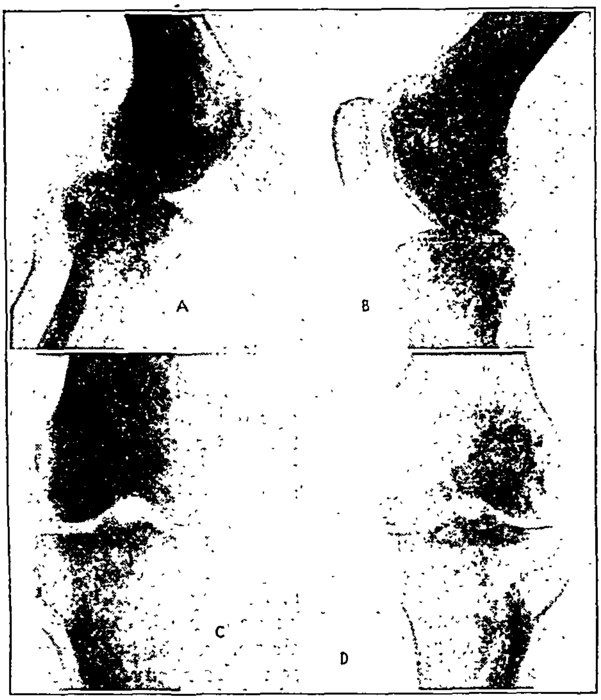

Fig. 3.—Rheumatoid arthritis, patient T. H. J. Views of the knees show exostoses at both the posterior and anterior edges of the femoral condyles in the left knee joint. Joint spacing in the left knee shows a further decrease, and there is a small plaque of thickening along the outer lip of the articular surface of the left tibia.

Progress.—The weight of the patient was 70 Kg., and he received 280 cc. of isotonic solution containing 280 mg. of procaine hydrochloride and 280 mg. of ascorbic acid. He had considerable relief of pain and spasm immediately after the infusion and was able to discard one of his canes. He received a total of 8 infusions in conjunction with a high ascorbic acid intake orally. His improvement was remarkable in that he required no salicylates. He was able to go up and down stairs without difficulty; he slept better, and he found that he was able to do many things about his house that he could not do before, such as climbing a ladder. His appetite improved.

On Jan. 6, 1948 he slipped and fell, sustaining a mild cerebral concussion and multiple contusions. There was aggravation of pain in the knees, shoulders and back. Radiographic examination revealed no evidence of pathologic conditions due to trauma. Another infusion of procaine hydrochloride relieved him of all pain and spasm.

He returned on June 19, 1948 complaining of slight pain in the knees and ankles. Another infusion of the drug was given. To the time of writing there have been no complaints of pain or spasm. He is able to drive his car, which he had not been able to do for the past ten years. His sedimentation rate taken recently was 40 mm. in one hour (Westergren).

Arthritis Due to Trauma.—There were 42 patients with traumatic arthritis who received a total of 175 infusions, or an average of 4.2 per person. The greatest number given to a patient was 15 and the smallest 1. The duration of the disease ranged from nine months to seven years (table 1 *B*).

The 1 patient who had poor results failed to return after the first and only infusion. In this category, the majority of patients state that the pain that does return four to six days after the first infusion is considerably less in intensity. The results in this type of arthritis, especially in regards to mobility, will depend on anatomic factors. Increasing mobility cannot be expected where ankylosis is evident.

Six patients had definite monoarticular traumatic arthritis of the hip following reduction and pinning. The duration of pain and limitation of motion following operative intervention had been at least one year. All had relief of pain following infusions of procaine.

In this group, the results obtained were relief of pain and varying degrees of increase in mobility. The following case is illustrative:

M. J. is a woman aged 75 who was first seen Sept. 18, 1947. In 1943 she sustained a fracture of the left hip, which was reduced and pinned satisfactorily. She was able to get up and about six months postoperatively. She did well until 1946, when she began to have severe pain and limitation of motion. The pin was removed, but pain still persisted. When she was first examined, her complaint was pain in the left hip, radiating up the back and down the thigh. The use of a cane was necessary. Active and passive movements of the hip joint were painful and restricted. Radiographic examination revealed destructive arthritis of the left hip joint. The general condition of the patient was satisfactory, her weight being 55 Kg. She received 4 infusions of 220 mg. of procaine and 220 mg. of ascorbic acid dissolved in 220 cc. of isotonic sodium chloride solution within a two week period. The results were extremely satisfactory. The relief of pain has allowed her to lead an active life. The mobility of the left hip has increased, not to the range of the right hip but sufficient to allow her increased ambulatory freedom. To the time of writing there has been no return of symptoms.

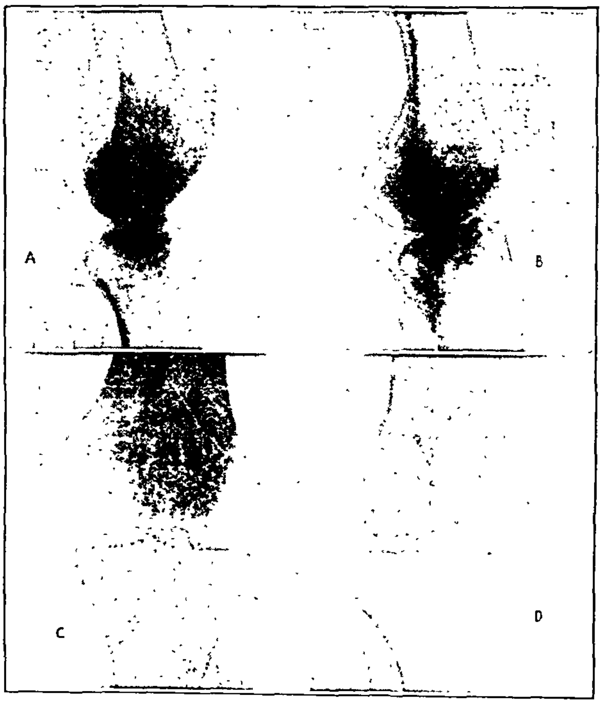

Fig. 4.—Degenerative disease of the knees, patient A. T. Pronounced osteoarthritic lipping is present throughout the osseous structures. This is especially noted in the tibial spines and the patella, in which there is a suggestion of fusion with the femoral condyles (right). Considerable proliferation is present in the posterior surfaces of the condyles and the head of the tibia. The joint space appears normal. Soft tissue swelling is present, and due to the patient's inability to fully extend the knee there is slight distortion of the structures.

Degenerative Disease of the Joints.—Degenerative disease of the joints, which is commonly known as osteoarthritis, represents our largest series. One hundred and fifty-four patients received 1,193 infusions, or an average of 7.1 per patient. The greatest number given to any one patient was 30, and the smallest was 1.

Table 1 *C* outlines the results obtained. Infusions in this group are usually given on a weekly basis. In this group will be found many patients who expect not only relief of pain but also complete restoration of function. It is generally agreed that the latter is dependent on structural changes in the surrounding musculature. Those whose results were poor were found to have other defects which masked the symptoms. These included herniated intervertebral disk, spondylolisthesis, tuberculosis of the spine, metastatic carcinoma and derangement of the meniscus of the knee. The following case is typical of our series:

A. T. is a housewife aged 63 who was first seen Oct. 5, 1947. For the past ten years she had complained of pain in both knees, especially the right knee. She had difficulty in walking and used a cane. Her disability prevented her from doing the lightest type of housework. She had received injections of gold compound, sulfur and various vaccines without *relief of pain.* Radiographic examination revealed bilateral hypertrophic osteoarthritis (fig. 4).

TABLE 2.—*Results Obtained at the Laconia Clinic in 215 Persons Receiving Intravenous Infusions of Procaine Hydrochloride Solution*

	Rheumatoid Arthritis		Arthritis Due to Trauma		Degenerative Diseases of the Joints	
Number of cases	10		66		139	
Number of infusions	140		651		1,844	
Results	No	%	No.	%	No.	%
Good	18	80	54	81.8	115	82.7
Fair	1	10	6	9.09	5	3.6
Questionable	..	..	1	1.51	3	2.16
Unsatisfactory	..	..	1	1.51	1	0.7
Poor	..	..	1	1.51	1	0.7
None	1	10	3	4.54	14	10.0

Physical examination revealed an adult, obese woman weighing 82 Kg. Both knees were swollen, tender, painful and limited in both active and passive mobility.

Results of laboratory procedures in respect to blood, urine, chemical analysis and sedimentation rate were within the normal limits.

The woman received 4 infusions of 328 mg. of procaine hydrochloride at weekly intervals with relief of pain. At the end of the fourth infusion she was able to discard her cane and do some work about the house. She returned Sept. 24, 1948, eleven months after the last infusion, complaining of slight pain in the right knee. Another infusion of procaine hydrochloride gave her satisfactory relief. She returned again Nov. 23, 1948, with the history of a fall on her left knee with exacerbation of pain and swelling. An infusion of the drug was given and relief of pain resulted. To the time of writing she is active and free of pain.

COMMENT

The results obtained in arthritic conditions by procaine administered intravenously indicate that this method is a satisfactory adjuvant in the management of arthritis. Using our procedure, Gage[25] at the Laconia Clinic, Laconia, N. H., has obtained equally satisfactory results as indicated by table 2.

Whitacre, in a series of 69 cases of rheumatoid arthritis in which 255 infusions were given, reports the following less favorable results: Complete relief in 19 per cent; partial relief in 26 per cent, and no relief in 55 per cent.[26] The discouraging results obtained by Whitacre in our opinion are attributable to his failure to increase the patient's intake of ascorbic acid.

The use of ascorbic acid in massive doses in the treatment of arthritic conditions is predicated on two factors: (1) the ascorbic acid deficiency usually found in these patients,[27] and (2) the experimental evidence of Richards that large quantities of ascorbic acid increase resistance against the toxic side effects of procaine, especially in patients in a poor nutritional condition.[28]

The versatility of procaine administered intravenously as a therapeutic agent is well established.[29] Although the intravenous injection of procaine was till recently regarded as an almost fatal accident, sufficient experience has shown that this procedure is safe if performed under constant medical supervision. Studies to determine its limitations and advantages should be carried out by skilled physician-anesthetists.[30]

The exact action of intravenous procaine will have to be determined. We suggested the possibility of diethylaminoethanol being the essential part of the *procaine radical.*[3a] However, *using smaller doses than* those recommended by Papper, Brodie, Lief and Rovenstine,[31] we found that the administration of diethylaminoethanol in millimol equivalents similar to procaine was not as effective as procaine. The apparent necessity of having the benzene ring in combination with this amino alcohol prompted Richards[32] to synthesize the diethylaminoethanol salt of para-aminobenzoic acid. This is different from procaine inasmuch as it is the salt instead of the ester. Richards found it to have an LD_{50} of approximately 800 mg. per kilogram of body weight intravenously in mice, which is much less toxic even than diethylaminoethanol itself, for which this value is approximately 350 mg. per kilogram. Using this salt in the same proportion as procaine (1:1,000), we found the analgetic effect to be more than that of diethylaminoethanol hydrochloride and less than that of procaine hydrochloride in equal parts (1 Gm. of each to 1,000 cc. of isotonic sodium chloride solution). It seems to have a more sustained effect without the unpleasant sensations usually found with a 0.2 per cent solution of procaine.

Our studies with dimethylaminoethanol at the time of writing are too incomplete for a definite conclusion.

Basically, we believe that the action of procaine administered intravenously is similar to the action of procaine employed as a differential spinal block. This action is described in a series of articles by Sarnoff and Arrowood.[33]

SUMMARY AND CONCLUSION

1. The intravenous infusion of procaine hydrochloride for the management of pain in arthritic conditions is a safe procedure, provided the administration is controlled.

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[26] 26. Whitacre, R. J.: Personal communication to the authors.

[27] 27. Kovacs, J.: Personal communication to the authors.

[28] 28. Richards, R. K.: Effects of Vitamin C Deficiency and Starvation upon the Toxicity of Procaine, Anesth. & Analg. **26:** 22, 1947.

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[30] 30. Compere, E. L.: The 1948 Year Book of Orthopedics and Traumatic Surgery, Chicago, The Year Book Publishers, Inc., 1949.

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[33] 33. Sarnoff, S. J., and Arrowood, J. G.: Differential Spinal Block, I., Surgery **20:** 150, 1946.

2. The results reported herein as obtained by the intravenous use of procaine for the control of pain in arthritic conditions are sufficiently favorable to warrant the further use and investigation of this agent by this method as a satisfactory adjuvant to the treatment of these conditions.

1082 Park Avenue (28) (Dr. Graubard).

INTRAVENOUS USE OF PROCAINE IN GENERAL ANESTHESIA

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J. D. KENNEDY, M.D.
and
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Procaine, or the hydrochloride of beta-diethylaminoethanol para-aminobenzoate, was synthesized by Einhorn[1] in 1904 (published in 1905). Its widespread use and popularity produced many experimental and clinical reports on the pharmacology and toxicology of procaine and related compounds. These were mainly related to the subcutaneous use of the compound.

EVALUATION OF PROCAINE IN THE LITERATURE

Eggleston and Hatcher[2] in 1916 and 1919, working with cats, reported that toxic effects of procaine were in direct proportion to the rate of introduction of the drug into the blood stream. They found that the injection of a sublethal dose produced an abrupt fall in blood pressure (believed to be due to cardiac effect) and cessation of respiration, followed by brief but severe clonic convulsions. This sublethal dose could be repeated with procaine in twenty minute periods without evidence of accumulation. Also, continuous intravenous administration of the compound was tolerated when more than a lethal dose was given over a period of time. The heart rate was found to vary but was usually slowed. Death, when it occurred, was apparently due to the nearly simultaneous paralysis of the heart and respiratory center. From their experience in vitro they believed that the breakdown of procaine was mainly in the liver. The measures of resuscitation that they recommended were artificial respiration, with or without cardiac massage, and intravenous administration of epinephrine.

Lewy in 1937[3] reported the therapeutic use of small doses of procaine intravenously in the treatment of tinnitus. Lundy[4] used 0.1 per cent solution of procaine in the treatment of pruritus. Burstein[5] gave single doses of 100 mg. of the drug intravenously in the treatment of acute arrhythmias during clinical anesthesia and emphasized its importance in cardiac or paracardiac operations. Allen[6] was the first to employ procaine intravenously for obstetric analgesia and anesthesia. He gave doses as high as 120 mg. per minute. This method was also reported by Johnson and Gilbert.[7] Fraser and Kraft[8] reported 1,500 cases in which they used a 0.1 per cent solution of procaine combined with thiopental (pentothal®) in 0.1 to 0.2 per cent solution.

In 1948 Brodie, Lief and Poet[9] reported the presence of an enzyme in human plasma which catalyzes the hydrolysis of the drug to para-aminobenzoic acid and diethylaminoethanol. They have shown that when administered at rates of 20 to 45 mg. per minute the procaine completely disappears from the blood stream in about two minutes, regardless of the duration of the injection. Also in fresh plasma in vitro 80 to 100 per cent of the drug is broken down in two minutes. They concluded that at least in the human being the liver is not an important site for the transformation of procaine. Graubard and Peterson[10] in March 1949 reported the therapeutic use of procaine intravenously in 448 cases.

TABLE 1.—*Types of Operations During Which Procaine Was Used Intravenously as an Adjunct to Anesthesia (400)*

Thoracic surgery (207) *	
Thoracoplasty	12
Resection of lung	43
Transthoracic vagotomy	38
Decortication	19
Other thoracic operations	95
Thyroidectomy	47
Laparotomy	24
Orthopedic operations	29
Laminectomy or spinal fusion	12
Laryngectomy	5
Other operations	74
Anesthesia (no operation)	2
Total	400

* The total number of administrations listed in each table.

Our interest in administering procaine hydrochloride intravenously as an adjunct to general anesthesia was initiated by results reported by Bittrich and Powers.[11] They gave a 1 per cent solution of procaine intravenously by continuous drip combined with thiopental sodium, nitrous oxide, cyclopropane or ether during anesthesia for thoracic surgery. They observed depression of coughing, decreased cardiac irritability and inhibition of sweating.

This report is based on 400 administrations of procaine (table 1). This represents less than one tenth of the total number of general anesthetics administered in the same hospitals during this period.

TECHNIC OF ADMINISTRATION

The technic of administration has been fairly constant. One per cent solution of procaine hydrochloride is prepared by dissolving 5 Gm. of sterile procaine

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Read in a Panel Discussion on Intravenous Procaine before the Section on Anesthesiology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 8, 1949.

[1] Einhorn, A., cited by Braun, H.: Ueber enige neue Artliche Anaesthetica (Stovaine, Alypin, Novocaine), Deutsch med. Wchnschr. **31:** 1668, 1905.

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hydrochloride crystals in each 500 cc. of solution used. Five per cent dextrose solution is the main solvent, but isotonic sodium chloride solution may be used and is more stable if the solution is held over more than one day. Standard intravenous equipment is used. General anesthesia is usually started with the drug of choice (table 2), usually thiopental sodium with or without a curare preparation; however, the incidence of agents other than thiopental combined with intravenous procaine has increased in the second half of this series. Administration of the solution of procaine is started when convenient, but if it is begun within a few minutes after the induction of anesthesia, further additions of the induction agent may be minimized. It is important in starting the intravenous use of procaine to avoid a sudden rapid flow of the solution into the vein. The rate is controlled by counting the number of drops per minute. Some of the disposable sets state the number of drops required to make 1 cc., otherwise one must determine the number for a given type of dropper. Intravenous administration of the solution of procaine is started at 30 to 40 mg. (3 to 4 cc. of 1 per cent solution) per minute in the average adult; a slower rate is used for children or the elderly or debilitated patient. Many superficial procedures and thoracic operations can be completed with the patient under nitrous oxide and procaine anesthesia after thiopental induction, although small amounts of thiopental sodium are added if necessary. The use of procaine as the initial agent is not necessarily of much value but does emphasize some of the properties of the agent. The induction with other agents is often speeded up; excitement is minimal or absent; such troublesome reflexes as coughing and gagging are depressed, and smaller quantities of the induction drugs are required for sufficient anesthesia to start the operation or intubation, the latter being often accomplished without coughing.

Table 2.—*Drug Combinations for Induction of Anesthesia*

	Percentage
Thiopental, curare and topical cocaine *	63.7
Thiopental and topical cocaine	5.9
Thiopental and curare	2.0
Cyclopropane and topical cocaine	7.0
Cyclopropane	3.5
Nitrous oxide, oxygen and ether	6.0
Procaine 1% (as initial or only agent)	4.3

* In all instances in which an endotracheal tube was introduced to clear the airway cocaine was used to produce topical anesthesia of the larynx. However, the trachea was generally not completely anesthetized, as there was frequently coughing after intubation. It is believed that the severe spasm of the respiratory and bronchial muscles is decidedly reduced by this partial or complete topical anesthesia. This condition of pronounced reflex following intubation of the improperly anesthetized larynx is referred to as bronchospasm by some anesthetists. We believe that there is such an entity as bronchospasm from other stimuli or causes and choose not to use that term for the reflexes set up by stimulation from an endotracheal tube in an improperly anesthetized larynx and trachea. This anesthesia may be produced with any drug or method desired. We elect to use some topical anesthetic agent, especially with thiopental or cyclopropane.

Table 3.—*Complications Occurring During Anesthesia Due to Procaine with Thiopental Induction Followed by Nitrous Oxide and Oxygen (282)*

Complication	Number	Percentage
None	245	87.0
Blood pressure drop, moderate	13	4.6
Blood pressure drop, severe	5	2.0
Tachycardia	8	3.0
Cyanosis, all degrees *	17	6.0
Muscle twitching	3	1.0
Convulsions (generalized)	1	....
Respiratory arrest	1	....

* In some instances the apparent cyanosis of the skin was not accompanied by cyanosis of the blood in the operative field. In other instances the blood was cyanotic, and this effect decreased some time after administration of procaine was discontinued. It is not likely that many of these instances of cyanosis were directly due to the procaine. None of these patients exhibited sequelae characteristic of damage due to a shortage of oxygen.

COMPLICATIONS

The most significant and dangerous complication that may be caused by procaine is severe circulatory depression (table 3). During study of this series of cases, excessive rates of administration were used which resulted in the rather high incidence of circulatory depression. The figure noted in table 3 for "blood pressure drop, moderate" includes all depression of blood pressure recorded as probably due to procaine. In most patients thiopental inhibits the tendency for convulsive action, so that an excessive amount of procaine may produce circulatory depression without other warning signs. Without a barbiturate, muscle twitching is a more prominent feature, especially with cyclopropane induction (table 4). Probably most of the cases of cyanosis included in the table were not due to procaine, and none of these patients had any sequelae indicative of damage to the central nervous system from oxygen shortage.

Table 4.—*Complications Occurring During Anesthesia Due to Procaine with Cyclopropane Induction and Maintenance (48)*

Complication	Number	Percentage
None	33	70
Blood pressure drop, moderate	4	8
Blood pressure drop, severe	1	2
Tachycardia	2	4
Cyanosis (all degrees)	1	2
Muscular twitchings *	8	17
Convulsions	0	..
Respiratory arrest	1	2

* Muscular twitching is more prominent than circulatory depression when no barbiturate is used.

Table 5.—*Complications Due to Procaine During Other Types of Anesthesia (70)*

Complication	Number	Percentage
None	62	90
Blood pressure drop, moderate	4	5.7
Blood pressure drop, severe	0	..
Tachycardia	0	..
Cyanosis	1	..
Muscle twitching	1	..
Convulsions (generalized)	0	..
Respiratory arrest	0	..
Shallow respiration	1	..

The complications due to procaine during other types of anesthesia (table 5) were minimal, probably because of more cautious use of this agent.

The postoperative complications presented in tables 6 and 7 are difficult to evaluate from the standpoint of anesthesia. Nausea and emesis are usually considered to be due to the anesthetic agent in this type of surgical procedure; they were rare. The other complications have not been more frequent than after other types of anesthesia.

TYPICAL RESULTS WITH INTRAVENOUSLY GIVEN PROCAINE

Figure 1 is a copy of the anesthesia record during a thyroidectomy. The patient was a white man aged 43. He had been treated with propylthiouracil. The basal metabolic rate was + 14 per cent. The course of anesthesia was eminently satisfactory. (Coughing, when it occurs with procaine, is usually of mild intensity.) Recovery was quiet, without nausea or retching. Postoperative analgesia was good.

Figure 2 is a record of anesthesia during a hip nailing. The patient was a white woman aged 70. After induction of anesthesia with thiopental the patient could be maintained on a low rate of intravenous procaine (30 mg. per minute) with nitrous oxide. During the operation the patient moved her head from time to time, but there were no troublesome reflexes or other activity. The patient awakened within fifteen minutes and had excellent postoperative analgesia. There was no nausea or vomiting.

TABLE 6.—*Postoperative Complications in 162 Thoracic Operations*

Pneumothorax	11
Atelectasis	9
Pleural effusion	5
Hemothorax	4
Bronchopleural fistula	4
Shock	4
Thrombophlebitis	4
Nausea and emesis	3
Hematuria	2
Wound infection	2
Empyema	1
Gastric dilatation	1
Subcutaneous emphysema	1
Cerebral thrombosis and death	1
Abdominal hemorrhage and death	1
Mediastinitis and death	1
Tachycardia	1
Bronchitis	1
No data	14
No complications	92

No definite relationship has been established between procaine and these complications. The drug seemed to be helpful in lowering the incidence of postoperative nausea and emesis.

TABLE 7.—*Postoperative Complications in 47 Thyroidectomies*

Hoarseness	2
Hematoma	3
Tracheotomy *	2
Cord paralysis	1
Pneumonitis	1
Nausea and emesis †	1
Postoperative pain ‡	2
No data	3
No complications	32

* Tracheotomy necessitated by anatomic changes and not by anesthesia.
† Nausea and emesis or nausea alone have been rare after all types of surgical operations.
‡ Postoperative analgesia has been a prolonged and prominent feature in the intravenous use of procaine during anesthesia for thyroidectomy.

Figure 3 shows the course of anesthesia during resection of the lower lobe of the right lung. The patient was 19 years of age and the disease was diagnosed as localized bronchiectasis. Light anesthesia was maintained after intubation. One per cent procaine solution was administered at an average rate of 62 mg. per minute. (Incidentally, flow of this intravenous dropper was about 10 drops per cubic centimeter.) The patient was awake within three minutes. There was no nausea or vomiting. Postoperative analgesia was poor.

Figure 4 is the anesthesia record of a transthoracic vagotomy performed on a man aged 44. Intravenous administration of procaine was started near the beginning of the induction and allowed to run at too rapid a rate, producing preconvulsive manifestations. Despite the light anesthesia, administration of 60 units of curare permitted easy intubation. Postoperatively, the patient was awake on the operating table; there was no nausea or vomiting.

Figure 5 shows the course of anesthesia of a Negro woman aged 47 with thyrotoxicosis, a basal metabolic rate of + 11 per cent and hypertension with left ventricular hypertrophy. The premedication was not given as ordered, and the patient arrived in the operating room exceedingly apprehensive. The initial induction of anesthesia with thiopental lowered the blood pressure, and after thirty minutes of a fast procaine infusion rate there was a further drop in blood pressure. On slowing the rate of intravenous administration of procaine the blood pressure came up and tended toward a new fairly high level. Following an increased procaine rate of 80 mg. per minute (120 drops) the pulse weakened and the blood pressure rapidly dropped to 100 systolic. The flow of procaine was stopped, and the blood pressure returned to a normal level. This was intended to demonstrate the ability of intravenously given procaine to depress circulation; therefore, no other changes in the anesthesia were made. Recovery to consciousness occurred in ten minutes. There was no pain, no salivation and no nausea and emesis. Postoperative analgesia was excellent.

Figure 6 demonstrated the intravenous use of procaine during an eight hour operative procedure with no evidence of accumulation of the procaine. This anesthesia also shows a conserva-

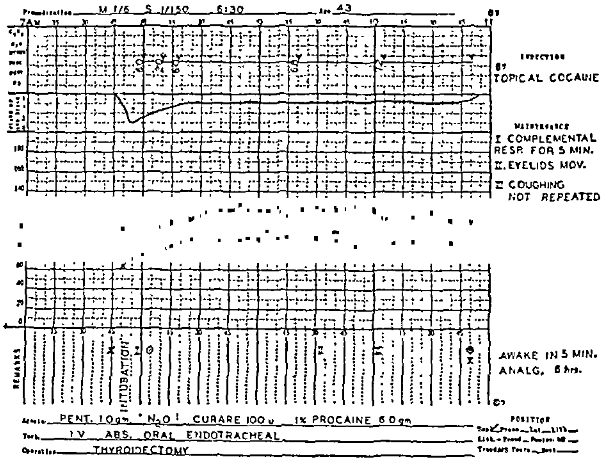

Fig. 1.—Anesthesia record during a thyroidectomy.

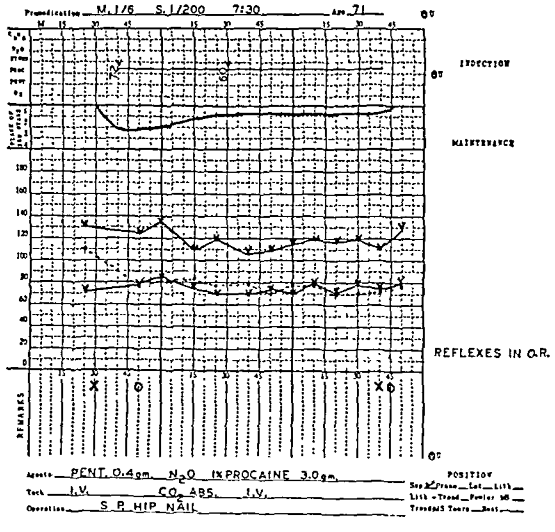

Fig. 2.—Record of anesthesia during a hip nailing.

tive intravenous use of procaine, since supplementary injections of thiopental solution were given without limitation. The fact that the patient was awake in the operating room at the conclusion of the procedure suggests that relatively little thiopental sodium was used for such a long operation. Postoperative analgesia was satisfactory and prolonged.

ANALYSIS OF RESULTS

Advantages.—In regard to the results obtained from this intravenous use of procaine, some desirable features have been observed:

1. The cough reflex is depressed. This is not an absolute obtundation, but it is sufficiently effective to allow an endotracheal airway in most patients during light anesthesia without cough.

2. It has been relatively effective in preventing cardiac arrythmias during intrathoracic operations with cyclopropane induction, as determined by clinical observations.

3. Sweating is depressed; the skin stays dry and warm; frequently the hands will be cool and dry; seldom will a patient perspire during its use.

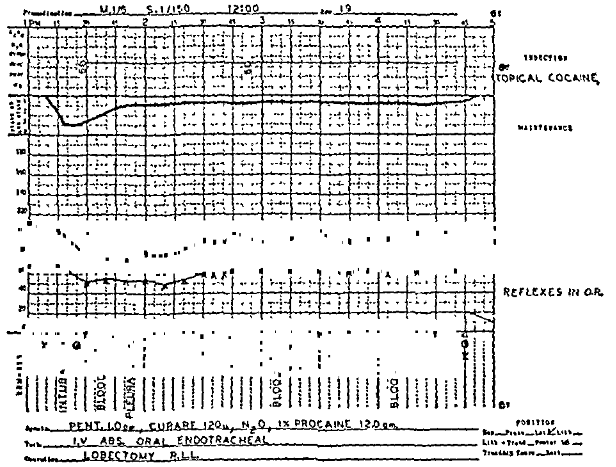

Fig. 3.—Course of anesthesia during resection of the lower lobe of the right lung.

4. The entire respiratory tract is usually dry; depression of salivation is particularly noticeable and may account for or be related to the absence of nausea and retching on recovery.

5. Recovery from anesthesia is nearly always quiet, rapid and without excitement. The patients are mentally clear in a few minutes unless excessive quantities of nonvolatile drugs have been used.

6. It provides postoperative analgesia for twenty minutes to several hours in patients who recover consciousness promptly after administration of anesthesia has been discontinued.

7. Intravenously given procaine is helpful in maintaining light anesthesia with any general anesthetic drug, probably because of the drying of the respiratory tract, control of the cough reflex and some analgesia. The part it plays in producing general anesthesia is difficult to ascertain but can be demonstrated in many patients in combination with a weak drug such as nitrous oxide.

Disadvantages.—All the dangers and disadvantages of the intravenous use of procaine probably have not been encountered as yet, but some have already been discussed.

1. Circulatory depression is the severest hazard yet encountered in the intravenous use of procaine. It is particularly dangerous because it is not preceded by any gross warning sign and because the fall in blood pressure may be exceedingly rapid. (To prevent this hazard, one should avoid rates of administration of over 40 mg. per minute except while watching the circulation constantly. One should use even less in elderly patients.)

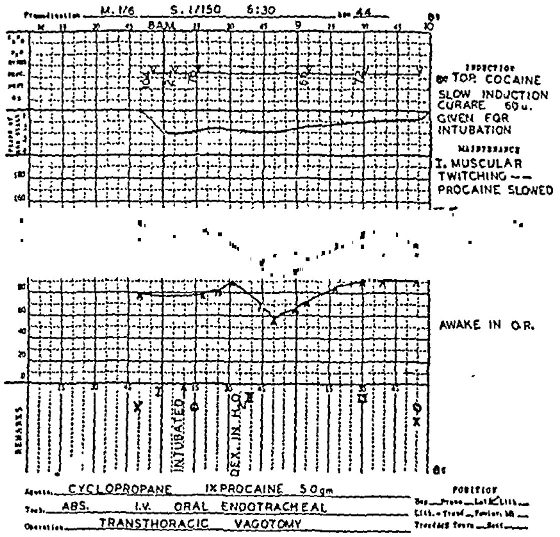

Fig. 4.—Anesthesia record of a transthoracic vagotomy.

2. Muscle twitching of the face generally occurs before convulsive movements. These usually cease after the rate of administration of procaine has been slowed. (Generalized convulsions may require treatment with intravenous thiopental sodium. Signs of motor irritability are readily seen and are neither a common nor a serious hazard.)

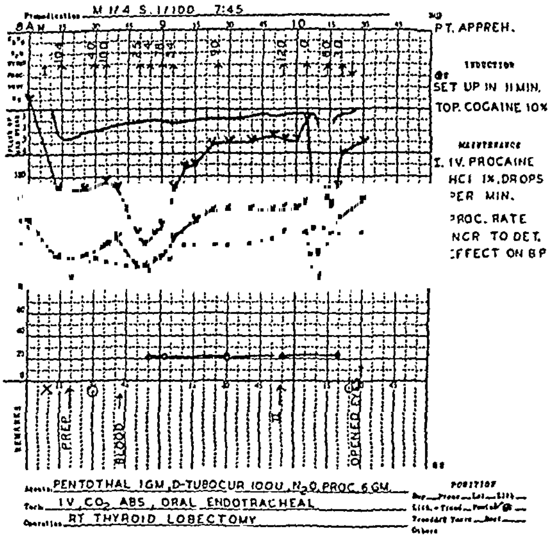

Fig. 5.—Course of anesthesia during a right thyroid lobectomy.

3. Respiratory arrest occurs about the same time as circulatory depression, so it is a late diagnostic sign and therefore must not be relied on as a warning of overdosage. Respiratory arrest should be promptly treated by inflation of the lungs with oxygen.

4. Sensitivity to the drug may exist. We have not yet encountered this in the intravenous use of procaine during general anesthesia.

5. The possibility of delayed reaction or toxicity has neither been demonstrated nor ruled out.

6. Technical disadvantages are: it is necessary to have separate means of infusion that can be controlled without regard to the amount of fluid being administered; the procaine solution must be prepared fresh daily; the means of measuring the rate of flow of the solution must be available.

7. Administration of the drug by this method requires careful and continuous observation of the patient by one experienced and skilled in the administration of anesthetic agents.

The intravenous use of large quantities of procaine in conjunction with general anesthesia has exhibited some desirable features. The optimum dosage has not been determined and certainly will vary with patients and the type of anesthesia. This should not be called procaine anesthesia, nor should the procaine be expected to produce anesthesia alone. Besides the aforementioned effects of intravenously given procaine, it has been found effective in stopping hiccups during general anesthesia when administered at a rate of 40 to 60 mg. per minute, this effect requiring five to fifteen minutes of administration. Its usefulness is somewhat less when combined with ether, which in itself is an adequate anesthetic drug. The use of procaine seems to be more valuable in conjunction with thiopental sodium and nitrous oxide, because this latter combination frequently leaves much to be desired.

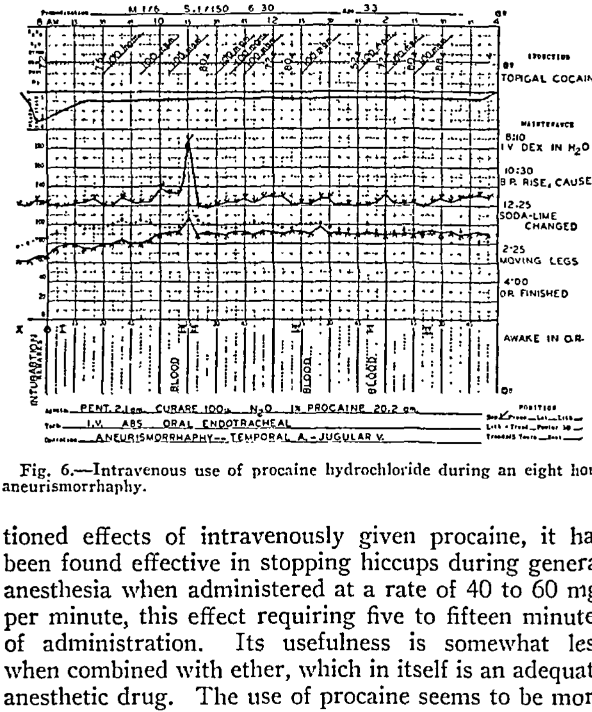

Fig. 6.—Intravenous use of procaine hydrochloride during an eight hour aneurismorrhaphy.

SUMMARY

The results obtained in 400 intravenous administrations of procaine hydrochloride during the induction of general anesthesia are presented. The experience has been that it probably has its greatest value in thoracic operations, in thyroidectomies and in many superficial procedures for which one wishes to maintain light anesthesia. One cannot stress too strongly the danger that this intravenous use of procaine will produce circulatory depression when an overdose is administered. These studies have encouraged us to continue investigation of the use of this drug by the intravenous route. It is recommended that the least amount of drug that will accomplish the desired results be employed. In this series of cases, this amount has been found to be 1 to 3 Gm. per hour in the average adult patient. The general benefit derived from intravenously given procaine seems to be due to the depression of some troublesome reflexes.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. GODMAN AND ADRIANI; DRS. EDMONDS, COMER, KENNEDY AND TAYLOR, AND DRS. GRAUBARD AND PETERSON

Dr. Julia G. Arrowood, Boston: The problem of the mechanism by which procaine produces the results is a fascinating one. Drs. Graubard and Peterson believe that relief of pain is the most important factor in the treatment of arthritis with procaine and that this relief results from anesthetization of peripheral nerve endings by the intravenous infusion of procaine in 0.1 per cent solution. This explanation would be compatible with the fact that, although the procaine relieves pain of the joint, it does not relieve pain resulting from pressure (e. g., pain from ruptured intervertebral disk) probably because the fibers mediating the latter type of pain are large enough to be spared by the dilute solution. Dr. Edmonds and the group who were using a concentrated solution of procaine in general anesthesia suggested that the pain threshold is raised by the intravenous infusion, by its effect both on peripheral nerve endings and on the cortex. I believe that the cortical effect is the more important. I have not had experience with the infusion of so concentrated a solution as 1 per cent, but I did not find that appreciation of pin prick was affected by the infusion of 0.1 per cent solution and Papper has stated that the pain threshold was little affected by the infusion of 0.1 per cent procaine. In regard to the effect of the drug on the autonomic nervous system, I am interested as to whether the result is a reflex one, as suggested by Dr. Graubard, or whether it is due to direct blockage of autonomic ganglions. I am not aware that there has been any investigation of the ability of a 0.1 per cent solution of procaine intravenously administered to produce the direct ganglionic blocking effect. The experiments which have been done by pharmacologists have involved the close interarterial injections of the drug. The next interesting point is the question of muscle relaxation. Is the muscle relaxation which occurs following intravenous administration of procaine in arthritis and, similarly, in tetanus the result of depression of peripheral stimulation, or is the relaxation caused by a direct "curarizing" effect of the procaine? Procaine does block the response of the motor end plate to acetylcholine, although it is not as powerful in that regard as is curare. In regard to the use of concentrated procaine solutions in general anesthesia, I fear that there is a tendency to presume on technical proficiency and to take undue risks. Physicians may be, possibly, tending to seek the relief of minor morbidity at the expense of major disaster. I fear that the injection of exceedingly large doses of procaine hydrochloride in 1 per cent solution, when the warning of muscle twitching is obscured by such a drug as thiopental sodium (pentothal sodium®), may result in tragedy.

Dr. Stevens J. Martin, Hartford, Conn.: An analysis of over 3,000 intravenous administrations of procaine in man, recently completed by our group at St. Francis Hospital in Hartford, has provided us the opportunity to respect many possible side actions of procaine as well as its clinical advantages and limitations. Dr. Adriani's report on the treatment of tetanus, with the seemingly paradoxic use of procaine, which has an analeptic-like property, demonstrates a well known pharmacologic principle, namely, that procaine like most drugs possesses a main action as well as several side actions. Dr. Adriani points out how the central stimulant side action of procaine can be eliminated by increasing the threshold of the central nervous system with the use of premedication and/or thiopental, tribromoethanol (avertin®) or chloral hydrate. The other more desirable responses of procaine apparently remain unaltered. This is commonly done in medical practice as shown by the use of ephedrine and pentobarbital sodium, aminophylline and amobarbital sodium, and other combinations. Dr. Adriani's emphasis on the lack of an entirely satisfactory procedure in the essential control of muscular rigidity and spasm in tetanus is most important. Procaine combinations thus far certainly are not the answer to the problem, notwithstanding the individualized, painstaking care given to his patients. The following questions appear pertinent. 1. How was the total dose determined? 2. Was the rotameter employed in the administration of procaine? 3. Should not cardiac disease be considered a contraindication to the intravenous administration of procaine? Dr. Taylor's studies, in revealing certain responses in man following intravenous use of procaine, emphasize statements made previously that premedication can minimize certain side actions. Two years ago our group reported similar observations on the first 800 administrations of procaine, employing 0.2 per cent concentration, with premedication of pentobarbital sodium 90 mg., morphine sulfate ⅛ grain (8 mg.) and atropine sulfate 1/100 grain (0.6 mg.). Despite the decrease in premedication as well as in concentration and total dose of procaine as compared to Dr. Taylor's routine, we similarly noted cough reflex obtundation, suppression of diaphoresis, suppression of undesirable reflexes, elevation of pain threshold, lighter inhalation anesthesia, rapid recovery from anesthesia without excitement and postoperative analgesia, varying from two to twenty-four hours. Fall in blood pressure was seldom great.

Dr. George J. Boines, Wilmington, Del.: Considering the fact that tetanus is 100 per cent preventable through the prophylactic injection of tetanus toxoid and tetanus antitoxin at the time of injury, it is surprising that so many cases of tetanus have been reported by the speaker from so many hospitals. It is true that some patients do not seek prophylactic injections, but prophylaxis is certainly important from the standpoint of public health. I should like to report 1 case of tetanus which was observed at the Doris Memorial Unit of the Wilmington General hospital two months ago. A white man, aged 22, was admitted April 15, critically ill with severe stiffness of the entire body. He was placed in the oxygen tent, received 200,000 units of tetanus antitoxin, and was given 40 units of curare every two hours. He received 480 units of curare during the first twenty-four hours, and treatment was continued for four days, during which he received a total of 1,120 units of the agent. Thiopental sodium intravenously and phenobarbital sodium intramuscularly were used for sedation in attempting to control the convulsions and convulsive movements. On the fifth day of hospitalization we were able to obtain mephenesin (tolserol®) for intravenous use and gave him 50 cc. of the solution intravenously three times a day. We noticed that this drug produced immediate relaxation of the entire body including the masseters. By the seventh hospital day he was well relaxed and was able to eat without any choking spells. The administration of mephenesin was continued orally, giving him 1 teaspoon (about 0.5 Gm.) of the elixir and two tablets (each 0.25 Gm.) every three hours. Mephenesin had a greater relaxing power in this case of tetanus than did curare, and we did not notice any untoward effects. This drug should be tried in more cases to establish the proper dosage.

Dr. Norbert M. Bittrich, Detroit: Our first use of 1 per cent solution of procaine was in combination with cyclopropane or ether during thoracic surgery. We found that ether did not protect the patient against convulsions when the flow was increased to therapeutic doses necessary for the control of cardiac irregularities. These amounts were approximately 8 to 10 cc. per minute. We have given as much as 19 to 21 Gm. of procaine intravenously over a period of four hours without untoward results. At present we try to give a maximum of 3 Gm. of procaine intravenously per hour. When the thiopental-procaine combination is used, it has been our experience that the dose of thiopental is considerably less than if it were used alone. The patients have an extremely easy emergence from anesthesia, and we expect them to be awake and free of pain and talking within five minutes. We often have a prolonged period of relief of pain in which no or reduced amounts of narcotics are required. We also use the thiopental-procaine combination for ocular and orthopedic surgery. Procaine, with a few exceptions, is effective for the control of the cough reflex and laryngeal spasm. When this combination is being used, we permit the use of oral airway with little danger of cough or laryngeal spasm. We have given procaine intravenously for the control of laryngeal spasm and cough with good results. We use the thiopental-procaine combination in all our orthopedic surgical operations on adults with excellent results. Anesthesia of the patient is induced with a 2.5 per cent solution of thiopental sodium, and then the 1 per cent solution of procaine hydrochloride is started at 3 to 5 cc. per minute with a rotameter used to measure the amount. Small doses of thiopental may be given at intervals. We may give an average dosage of 180 to 300 cc. of procaine per hour and possibly a total of 12 to 18 cc. of thiopental. A patient 90 years of age required as little as 8 cc. of thiopental sodium and 35 cc. of procaine hydrochloride for a Smith-Petersen nail insertion. For therapeutic purposes we have used a lot of 0.1 per cent procaine as advocated by Graubard. We have given approximately seven hundred intravenous injections. Our clinical results have been for the most part good, but we have not encountered a lack of side reactions.

Dr. Ivan B. Taylor, Detroit: I should like to emphasize that the topic is not procaine anesthesia. The anesthesia has always been produced with another drug or other drugs. This is distinctly different from the therapeutic use of procaine in unanesthetized patients for relief of pain. The situation is somewhat different in that the patient is under better observation during general anesthesia. The most important complication is that a drop in blood pressure can be produced by intravenously given procaine. A drop in blood pressure from an overdose of the drug by this route can be rapid and severe. We were obtaining this response intentionally on 1 patient and observed a drop in systolic blood pressure of 100 mm. of mercury in two minutes. We have not had this occur under ordinary conditions of anesthesia. We have not encountered these drops in blood pressure when the rate of administration was 40 mg. or less in the average adult. In the elderly patient this amount might constitute an overdose. With regard to relaxation of muscle, our experience has indicated that procaine hydrochloride administered intravenously is unsatisfactory. We do not recommend the use of over 40 mg. of the drug per minute without careful observation of the circulation, particularly in relation to blood pressure. There is no reliable or good warning sign of impending overdosage. With most of other drugs there is some warning sign, something fairly gross that can be detected without too much difficulty. The greatest hazard of giving procaine intravenously is that the warning sign of the drop in blood pressure or change in blood pressure is not readily seen. It is not seen by the surgeon; it may not be discovered by the anesthesiologist soon enough. On rates of administration exceeding 40 mg. of procaine per minute this method is considered dangerous, as is chloroform anesthesia or deep anesthesia with cyclopropane, as far as watching the circulation is concerned.

Dr. F. F. Foldes, Pittsburgh: I should like to discuss the intravenous use of procaine in certain neurosurgical procedures, in which it is important that the patient be conscious and cooperate with the surgeon. I am thinking primarily of chordotomies for intractable pain. We proceed in these case by premedicating the patient with some barbiturate, morphine or meperidine, and atropine or scopolamine. When the patient reaches the operating room an additional small dose of analgesic is administered intravenously. In our hospital chordotomies are performed with the patient face down, so that in the course of the operation the airway is not easily accessible. This is another reason for keeping the patient conscious. An intravenous infusion of 0.4 per cent procaine hydrochloride in 5 per cent dextrose solution is started when the patient is in position. This strength of procaine was chosen because it meets both the fluid and procaine requirements of the patients. At the beginning of the operation the procaine solution is administered at the rate of 40 to 80 drops (8 to 16 mg.) per minute, and the surgeon relies mostly on local anesthesia for relief of pain. However, the pain reflexes originating from the lamina and the dura cannot be controlled well by local anesthesia alone. Therefore, when these structures are reached the rate of infusion is increased to 80 to 160 drops (16 to 32 mg.) per minute. In this way the patient can be kept comfortable during the laminectomy and chordotomy. After the chordotomy has been performed the conscious patient can be tested and adequate information can be obtained regarding the pain relief afforded by the operation. We have found this procedure both safe and satisfactory. We have not given ascorbic acid with procaine by the intravenous route, as Dr. Graubard does; perhaps this is why our results have been the same as those reported by Dr. Martin and Dr. Whitacre. If procaine and ascorbic acid should be used together, it might be worth while to administer 500 mg. of ascorbic acid to a controlled series of patients, and find out what, if any, results can be obtained by the use of massive doses of ascorbic acid alone.

DR. HAROLD E. GODMAN, New Orleans: The exact mechanism of the intravenous action of procaine is not known. These were clinical observations. However, we believe that raising the threshold of pain to external stimuli may be a factor. We had 1 case in which procaine by the intravenous route was used alone. Some sedation and muscle relaxation was obtained. The lumbar puncture in this patient could not be performed on the previous day, but after the administration of 1 Gm. of procaine intravenously, the puncture was accomplished with ease. Dr. Martin has asked how we judged dosage. The total dosage was determined solely by the patient's tolerance to the drug. We did not exceed 1 Gm. with any single administration. The infusion was started without benefit of a flowmeter. We merely observed the drip and counted the drops per minute. Any untoward signs indicated to us that the infusion should be slowed down or stopped altogether. Dr. Martin asked about our use of intravenous procaine in patients with cardiac disease. These cases were in children and, in the main, in healthy adults. Few patients were aged persons who unknowingly might have had cardiac disease. In the series treated with procaine, none had known cardiac disease. I agree entirely with Dr. Boines in the matter of prophylaxis. Tetanus is a disease that is entirely preventable. That was shown by the army's experience during the war. Most of our patients either were Negro or came from outlying areas in which preventative medicine is not practiced to a great extent. Therefore they had not received tetanus toxoid. Also, in this series no patient was known to have received tetanus antitoxin immediately following injury. The administration of thiopental sodium in these cases was by the intermittent method. We found that approximately thirty minutes after the administration of thiopental was discontinued the patient would again manifest muscle spasm and convulsions. We did not use a continuous infusion of the dilute solution of thiopental, and we cannot say how efficacious that might be. The oxygen therapy, the administration of tetanus antitoxin and other supportive measures were carried out by the surgical services in our hospital and were not discussed in the paper. These patients did receive oxygen, either by nasal catheter or by tent, when it was necessary.

DR. DAVID J. GRAUBARD, New York: Although the exact action on the autonomic nervous system of procaine administered intravenously is not known, clinical observations in acute anterior poliomyelitis seem to indicate the probable site of action. Smith and his co-workers (*J. Pediatrics* **34**:1 [Jan.] 1949) noted at autopsy the pathologic changes in sympathetic ganglions in fatal cases of poliomyelitis. The angiospasm in most cases not only was similar to Raynaud's disease in symptoms but also produced decided oscillometric changes. Recently, we observed that, in addition to the foregoing symptoms, many patients with acute poliomyelitis had pronounced arterial tenderness (*New York State J. Med.* **48**:2608 [Dec. 1] 1948). When procaine was administered intravenously, there was not only relief of pain but also muscular relaxation and diminution of flexure contractions. Collins, Foster and West (*New England J. Med.* **236**:694 [May 8] 1947) were able to relieve the angiospasm of poliomyelitis by means of paravertebral sympathetic blocks with procaine. Further clinical investigation of the symptom complex of pain will reveal the role that the sympathetic nervous system plays. Procaine administered intravenously seems to control by its mild sympatholytic action many of the symptoms produced by imbalance of the autonomic nervous system.

JAUNDICE

PHILIP THOREK, M.D.
CHICAGO

Jaundice, or hyperbilirubinemia, is an important subject to both the general practitioner and specialist; it always presents an interesting diagnostic problem. To have ways and means of coordinating and simplifying the subject is imperative, so that with the diagnostic armamentarium at hand a diagnosis may be readily reached and proper therapy instituted. A thorough knowledge of the pathologic physiology involved results in a more rapid and accurate diagnosis than does the memorized knowledge of the hundred and one conditions that might be associated with this symptom. It is with this in mind that the subject is presented.

PHYSIOLOGY

The fate of a normal red blood corpuscle seems to be the proper approach to the understanding of icterus. It is recalled that the normal erythrocyte eventually terminates its existence by being broken down in the spleen. In this organ the disintegrated red cell is divided into an iron-containing part (hemosiderin) and an iron-free part (hematoidin). The iron-free part is the precursor or mother substance of the main bile pigment called bilirubin. As the iron-free part of a broken down red corpuscle is delivered from the spleen to the general circulation it comes in contact with the reticuloendothelial system, which is a specialized network of cells arranged around the vascular system. These cells have the ability of converting the iron free part of the red cell into bilirubin. This bilirubin is attached to a heavy protein molecule, hence it is designated as bilirubin proteinate. It is in this form that it is delivered to the liver. The liver splits the bilirubin proteinate and excretes pure bilirubin via the hepatic duct into the gallbladder. When the gallbladder contracts, bilirubin is delivered into the intestinal tract, where it is acted on and broken down by bacteria to its end metabolite known as urobilinogen (urobilin). Some of this urobilin passes out and colors the feces;

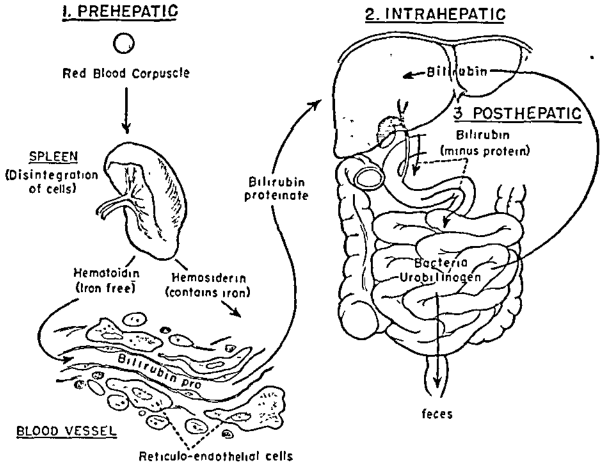

Fig. 1.—Metabolism of bile pigment. The subject of jaundice is best approached by considering it as a prehepatic, intrahepatic or posthepatic disease.

Read before the Section on General Practice at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1949.

From the Departments of Surgery of the University of Illinois, Cook County Graduate School of Medicine, Cook County Hospital, American Hospital and Alexian Brothers' Hospital.

the remainder is absorbed from the intestinal tract and is carried back to the liver via the portal system. One of the many functions of the liver is to reconvert the end product urobilinogen back to its early predecessor; bilirubin.

To thoroughly comprehend and clinically classify jaundice, one must understand this physiology and continually keep in mind the difference between bilirubin and urobilinogen.

CLINICAL CLASSIFICATION

Many classifications have been presented, each having their respective good points and drawbacks. A classification which has served well is one which divides jaundice into the following types: (1) prehepatic, (2) intrahepatic and (3) posthepatic. With this classification one can place the lesion as to its location before the liver, in the liver or after the liver.

Prehepatic Jaundice.—In icterus which develops from a prehepatic lesion the pathologic change may be found in the red blood cell. A typical example of this is familial hemolytic icterus. In this condition the red cells are apparently defective and, instead of being the usual normal biconcave disks, appear as "golf ball" red cells. They are also smaller than the normal cells; hence the condition has been referred to as microcytic spherocytosis. These cells have an increased fragility and rupture easily. As a result of this exaggerated bursting process, an excessive amount of iron-free pigment is excreted by the spleen, resulting in an excessive amount of bilirubin proteinate, which is formed by the reticuloendothelial system. This results in jaundice, because of hyperbilirubinemia. However, since this bilirubin is in the form of a proteinate and since this molecule is too heavy to pass through the kidney, the urine does not show the color that one would expect in the jaundiced patient (acholuric jaundice). Since an increased amount of bilirubin is being delivered to the liver, a greater amount of bilirubin is excreted into the intestines; this results in an increased formation of urobilinogen in the intestinal tract. Not only is this large amount of urobilinogen excreted in the feces, but the remainder is returned to the liver. The liver converts as much of this as it can into bilirubin, but the remainder overflows into the urine, resulting in an increased urobilinuria. Should the Ehrlich aldehyde test for urobilinogen be applied to such a urine, the result would be strongly positive; however, results of liver function tests would be negative. The van den Bergh test is of some value here, since a prehepatic jaundice gives a positive indirect and negative direct reaction.

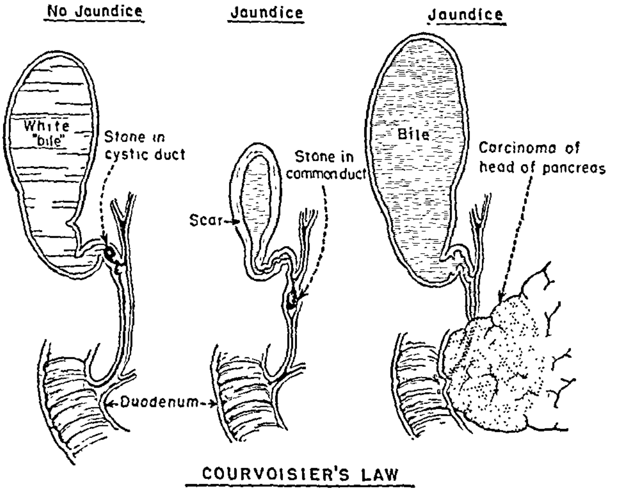

Fig. 2.—Courvoisier's law. With a stone in the cystic duct there is a large gallbladder filled with white bile and no jaundice; with a stone in the common duct there is a small shrunken, scarred gallbladder plus jaundice; with a carcinoma of the head of the pancreas both a large gallbladder and jaundice are present.

Other examples of prehepatic jaundice are icterus neonatorum and hypersplenism. In the former, too many red blood cells are destroyed, and in the latter the spleen is hyperactive.

Intrahepatic Jaundice.—In this type the pathologic change is located in the liver. It must be remembered that the entire liver does not become involved at once; if this were to occur, death would promptly ensue. Any toxin, be it chemical or bacterial, or any organism may so injure the liver that one or more of its important functions might be interfered with. Typical examples would range anywhere from a simple catarrhal jaundice to a fulminating acute yellow atrophy. When the liver is damaged, one or more of the liver function tests show signs of hepatic dysfunction. The literature is replete with descriptions of various liver function tests, and to attempt to utilize many of these is most impractical. Many workers in this fiield have their favorite test or group of tests; at times I use some of them, but for practical purposes I prefer to confine myself to the aldehyde test for urobilinogen and the cephalin flocculation test of Hanger. If the lesion producing the jaundice is intrahepatic, then both of these tests elicit positive reactions.

Posthepatic Jaundice.—In jaundice caused by a posthepatic lesion it is assumed that the prehepatic and intrahepatic functions are progressing normally. The commonest examples of posthepatic jaundice are stones in the common duct, carcinoma of the common and hepatic ducts, carcinoma of the head of the pancreas and metastases to the porta hepatis.

The obstruction to the flow of bile into the intestinal tract may be partial or complete. If the obstruction is partial, then some bilirubin gets into the intestinal tract and this would be converted to urobilinogen. That urobilinogen which returns to the liver will be converted back to bilirubin, since the lesion is not an intrahepatic one, and the aldehyde reaction for urobilinogen will be negative. If, on the other hand, the obstruction to the outflow of bile is complete then no bilirubin gets into the intestinal tract and no urobilin is formed; therefore, the aldehyde reaction will again be negative. Liver function tests in posthepatic jaundice reveal normal functioning livers unless the jaundice has been present well over a month and is of a severe degree; a biliary cirrhosis then forms.

DIAGNOSIS

Since diagnosis constitutes the most important part of all medicine, no detail must be overlooked. In evaluation of the diagnostic possibilities in each case nothing can replace the recording of a careful and accurate history. A detailed and keen physical examination is equally revealing. Courvoisier's law is helpful (fig. 2). It states that a large gallbladder in the absence of jaundice usually suggests a cystic duct obstruction (mucocele of the gallbladder); a small gallbladder plus jaundice usually indicates a stone in the common duct, and, finally, jaundice in the presence of a large gallbladder indicates a carcinoma of the head of the pancreas. One can also differentiate the various sites of carcinoma which involve the biliary tract. For example, in carcinoma of the gallbladder, jaundice is not present but a hard nodular mass which moves with respiration is palpable in the right upper abdominal quadrant; in carcinoma of the common duct, jaundice plus a portal vein complex (ascites, dilated esophageal varices, hemorrhoids) is present; carcinoma of the ampulla of Vater is suspected when one finds jaundice plus signs of pancreatic insufficiency, and, finally, carcinoma of the head of the pancreas can be diagnosed when jaundice plus an inferior vena cava complex (bilateral dependent edema and dilated veins of both inferior extremities) are noted.

The differentiation between a stone and a carcinoma of the common duct may not be too difficult; however, it should be remembered that, in contradistinction to the usual conception, a carcinoma may produce colic and a stone may be silent. Taking an icterus index on five successive days might clarify the diagnosis. If the lesion is a carcinoma, the icterus index is high and continues to rise; however, it is possible for an icterus index to drop if there is some slight ball-valve action in the presence of a stone. Many other ways are available for differentiation and some of these have been discussed.

Unfortunately pruritus (itching) is considered to be a symptom of jaundice; this is erroneous. Pruritus is a symptom of posthepatic (obstructive) jaundice. When the patient's primary complaint is his itching, then I feel quite positive that he is suffering from either a stone or a carcinoma which is involving the extrahepatic biliary passages. Rarely does a patient with intrahepatic jaundice complain of itching.

The pulse is usually slow in cases of icterus. I prefer bradycardia in such cases, because when the pulse becomes rapid it usually forebodes an oncoming acute yellow atrophy or hepatic decompensation.

Numerous laboratory tests are at one's disposal, but one can surmise that I have a preference for the Ehrlich aldehyde test for urobilinogen and the cephalin flocculation test. If the lesion is a prehepatic one, the urobilinogen reaction is positive and the reaction to liver function tests are negative; if the lesion is posthepatic, both of these results are negative. No tests are foolproof; however, the statements just made are found to be true in the vast majority of cases.

It seems to be a waste of time, effort and money to do a Graham-Cole test of jaundiced patients. The negative response found in these patients is most misleading. On the other hand, a flat roentgenogram of the abdomen is always taken. Time and space do not permit a discussion of the other tests available to the clinician; however, one should always keep in mind that, since no test is foolproof, diagnostic pitfalls are always present.

TREATMENT

There has been a tendency not only to classify but to discuss the treatment of jaundice under the headings of medical and surgical jaundice; this seems both impractical and misleading. When a patient with jaundice is seen one never knows whether the condition will eventually require a medical or a surgical regimen, and since the two types of therapy overlap, it seems preferable to consider them together. Only the salient parts in the therapy will be mentioned.

Needless to say, preoperative care is a major factor if a jaundiced patient is to be brought through a surgical procedure successfully. To mention only a few of the necessary essentials one might include electrolyte, water and protein balance; vitamin therapy, especially vitamins K, B and C, and an adequate glycogen supply to the liver. The severe pruritus which may be associated with jaundice can sap much of the patient's strength and energy. Recently I have used intravenous injections of procaine hydrochloride in a 0.1 per cent concentration and have found that this gives rather rapid; pronounced relief from itching in most instances. One thousand cubic centimeters of this solution is given at a rate never exceeding 1,000 cc. in one hour. A word of caution, however, should be mentioned; since the drug is a convulsant, its use in concentrated solutions or rapid injection of dilute solutions may produce irreparable damage. I feel that blood transfusions should be utilized not only as an operative or postoperative measure but also as a method of supplying many of the previously mentioned needs. Preoperative laboratory tests, such as blood cell counts, determinations of icterus indexes, prothrombin, bleeding and coagulating times, blood protein determinations, computing of albumin-globulin ratio and others, are all of value. However, none of these replace the clinical impression gained by the seasoned diagnostician as he watches his patient through this "build-up" period.

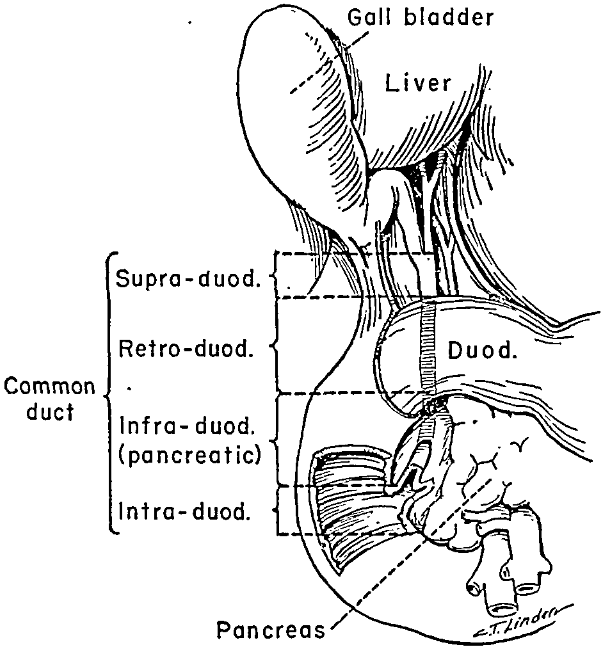

Fig. 3.—Anatomically and surgically the common duct may be divided into the following four parts, depending on its relation to the duodenum: a part above the duodenum (supraduodenal), a part behind the duodenum (retroduodenal), a part below the duodenum (infraduodenal) and a part within the duodenal wall (intraduodenal).

Many operative procedures, both curative and palliative, have been described for the jaundiced patient; the type of lesion determines the type of operation. I am of the opinion that metastases do not determine operability or inoperability; the only determining factor is fixation of the primary growth to surrounding vital structures. If the primary lesion is not fixed to a vital structure, even in the presence of operable metastases, we feel that Brunschwig's idea in attempting to remove as much of the malignant tissue as is possible is a valid one. Alexander has further stressed this point by suggesting the removal of solitary pulmonary metastases. The monumental work of Whipple in carcinoma of the pancreas has brought those conditions which were considered inoperable only a few years ago into the realm of operability.

One cannot discuss the surgical therapy of the common duct unless he is conversant with the surgical anatomy of this structure. It is simple and practical to consider the common duct as being divided into four parts, each being related to the duodenum (fig. 3). Therefore, the common duct is divided as follows: part 1, supraduodenal portion; part 2, retroduodenal portion; part 3, infraduodenal portion (pancreatic); part 4, intraduodenal portion.

Regardless of where the stone is located, only part 1 is immediately accessible to the surgeon; therefore, the incision is placed here. A stone in either part 1 or part 2 is usually easy to remove by means of a supraduodenal choledochostomy. I prefer to drain the common duct rather than to close it, because in the presence of edema and infection one never knows when a suture might cut through. A stone located in part 3 causes no concern if it is not embedded in the duct wall. If the stone is freely movable, it can be dislocated into part 1 through a supracholedochal incision. However, if the stone has become firmly fixed in an ulcerated and edematous part of the duct wall, it cannot be dislodged. Some surgeons advocate mobilization of the duodenum to remove such a stone. Since this part of the common duct passes through the head of the pancreas and not between the pancreas and duodenum and since this area is surrounded by a cage of vessels (superior and inferior pancreaticoduodenalis arteries), this maneuver seems impractical and at times is impossible. It is of value only when the stone has eroded through the duct and the head of the pancreas; this is unusual. A preferable method to handle such impacted stones in part 3 is the following one: The flat roentgenogram which must be in the operating room is examined; it is noted that this is a flat film, and no dye has been given. If the stone is not seen on this flat roentgenogram, it is concluded that it is a cholesterol stone. If such is the case then a catheter, not a T-tube, is placed from part 1 of the duct downward to the stone; this is sutured into the common duct. In twenty-four to forty-eight hours, a few drops of ether are injected into this catheter every morning and every evening. Since cholesterol is soluble in ether, most of these stones will dissolve and disappear without further manipulation. If, on the other hand, the impacted stone in part 3 is seen on the flat roentgenogram, it is concluded that it is high in calcium content, and this usually is not affected by the etherization method of treatment. In such an instance a short-circuiting operation is done to relieve the jaundice, which, after all, is of far greater and immediate importance than the presence of a stone. The procedure which I prefer is a cholecystojejunostomy. This brings up the necessity of determining whether or not the common duct should be explored. Such a decision must be made prior to performance of a cholecystectomy, since if the gallbladder is removed and then one finds it necessary to do a short-circuiting procedure it usually is more difficult to do a cholecochojejunostomy than to do a cholecystojejunostomy. The indications for exploring the common duct are too well known to warrant repetition here. If an indication is present, the common duct is explored, the necessary procedure carried out and the gallbladder removed if there is no need for its utilization in an anastomotic procedure. A stone in part 4 is also approached through an incision in part 1. Occasionally such a stone will dilate the ampulla of Vater, and then it can be pushed into the duodenum. If this is impossible, the middle of the descending portion of the duodenum is opened and the stone is extracted transduodenally. The duodenum is then closed.

Drains in the common duct can be removed when one is certain that bile is flowing freely into the duodenum. This can be determined by means of roentgenography with a contrast medium, tying off the tube or inspecting the color of the feces. Although common duct tubes have been removed anywhere from a few days to many months postoperatively, I am of the opinion that the average common duct tube should be removed somewhere within a two and four week period.

There are cases in which it is impossible to determine preoperatively whether the condition is due to a stone or to a neoplasm and whether or not the latter is operable. Although some conditions might appear inoperable preoperatively, the patient should not be denied at least the chance of an exploratory operation. Occasionally a life can be saved by removing a stone which was thought to be a neoplasm or by removing a neoplasm which was thought to be nonresectable.

The postoperative management is as vital to a successful result as is the operative procedure itself. This part of the treatment is not relegated to the uninitiated but is preferably handled by some one thoroughly conversant with the modern approach to this all-important phase of therapy.

SUMMARY

The proper approach to the subject of jaundice both diagnostically and therapeutically is a thorough understanding of the pathologic physiology of the metabolism of the bile pigments.

It has been found advantageous clinically to classify jaundice into three groups, namely, prehepatic, intrahepatic and posthepatic.

Dividing the common duct into supraduodenal, retroduodenal, infraduodenal and intraduodenal portions aids in standardizing the various procedures applied to common duct surgery.

25 E. Washington Street (2).

ABSTRACT OF DISCUSSION

Dr. Elmer C. Texter, Detroit: Dr. Thorek has covered the diagnosis, signs and symptoms of jaundice excellently. In his conclusions he stressed the purpose of the approach to the subject both diagnostically and therapeutically, and with a proper understanding of the pathologic and physiologic processes of metabolism of the bile pigments. The classification that he just made should be remembered, and also his division of the common duct into its four parts—the intra, supra, retro and infra duodenal portions. That is particularly important to those who are surgeons, as it aids in standardizing their method of approach.

Dr. R. B. Robins, Camden, Ark.: Jaundice many times presents, as the general practitioner knows, a baffling problem in differential diagnosis, and he is interested essentially in separating the medical case of jaundice from the surgical case. Physicians have been taught the old three way classification of hemolytic jaundice, parenchymatous jaundice and obstructive jaundice, and it is interesting to have Dr. Thorek give this other three way classification from a physiologic standpoint that will be so practical to the physician at the bedside. Dr. Thorek has presented a complex subject in a most practical and interesting manner.

DR. NAJIB-FARAH, Alexandria, Egypt: For fifteen years I have been interested in bilirubin, which is the pigment responsible for jaundice. My experiments have tended to establish that bilirubin is a factor in the processes of defense and immunity. Clinical evidence supports my division of infections into jaundice-producing and non-jaundice-producing. Bile-soluble pathogens provoked the former and bile-insoluble pathogens the latter, apart from cases in which jaundice might arise as a complication from any obstruction in the biliary passages in the course of either type of infection. Non-jaundice-producing infections are mainly characterized by the presence of normal bilirubinemia or hypobilirubinemia, suggesting the physiologic *inhibition of bilirubin production into the blood* as a defense aganst bile-insoluble pathogens. Typhoid and cholera are striking examples. In typhoid, despite the enlargement of the spleen and liver and the toxic state, the bilirubin level in the blood is generally normal, whereas one would expect to find it abnormally high; there is also inhibition of bilirubin secretion in the biliary passages as observed by Strumpell, Thoinot and Ribierre and others. In cholera jaundice is practically unknown, in spite of the toxic condition of the patients. The rice-water color of the stools is also evidence of the physiologic inhibition of the secretion of bile into the intestine as a protective measure against the cholera vibrio which lives and thrives in bile. Jaundice-producing infections, however, are mainly characterized by the presence of minor or high grades of hyperbilirubinemia generally accompanied with increase of bile salt production into the blood, as in pneumonia, syphilis or leptospirosis. The degree of hyperbilirubinemia depends on the degree of sensitivity of the causal pathogens to bile, on the nature of the infection (whether acute or chronic) and on individual reactivity toward bilirubin production. Jaundice in these cases without biliary obstruction is a regular occurrence of beneficial effect. A striking example of this process is the beneficial effect of the implantation of a jaundice-producing infection on a preexisting jaundice-producing infection: hence the success of the Wagner-Jauregg therapy in the cure of neurosyphilis based on the inoculation of the patient with malaria, rat-bite fever or relapsing fever organisms, all of them jaundice-producing and bile-soluble like the Treponema pallidum itself. This is also consistent with the general observation concerning the secondary infections arising during the course of an infectious disease; these sometimes aggravate the malady, sometimes exercise a favorable influence on its evolution. As far as rheumatism is concerned, a similar explanation suggests itself for the ameliorating effect of jaundice or the superposition of a jaundice-producing infection, such as pneumonia on chronic rheumatoid arthritis when the latter is provoked by a bile-soluble pathogen.

Intravenous Catheterization of the Heart.—Forssmann, in 1929, first introduced the method by catheterizing his own heart. In 1941, Cournand and Ranges emphasized its applicability to the study of certain physiologic changes that occur in various types of heart disease. Blood samples may be obtained from various parts of the venous system, from the right side of the heart and from the pulmonary artery and its branches for estimation of the oxygen content. At the same sites, the blood pressure may be determined with a Hamilton manometer or similar apparatus. Other investigators have used this method to study the hemodynamics in various derangements of the cardiorespiratory system. . . . Atrial septal defects can usually be diagnosed by noting the significant increase in the oxygen content of the blood from the right atrium as compared with that of the blood from the venae cavae. This results from the shunting of blood from the left atrium to the right atrium. Unusual defects, such as the draining of the pulmonary vein into the right atrium, may occasionally be encountered. An increase in the oxygen content from the atrium to the pulmonary vein as well as roentgenographic evidence of the position of the catheter will establish the diagnosis.—Don W. Chapman, M.D.; David M. Earle, M.D.; Lloyd J. Gugle, M.D.; Russell A. Huggins, Ph.D., and Walter Zimdahl, M.D., Houston, Texas, *Archives of Internal Medicine,* October 1949.

AUREOMYCIN AND ITS EFFECT IN EARLY STAGES OF SYPHILIS

A Preliminary Report

JACK RODRIQUEZ, M.D.
FREDERICK PLOTKE, M.D.
SEYMOUR WEINSTEIN, M.D.
AND
WILLIAM W. HARRIS, M.D.
Chicago

Aureomycin, one of the newer antibiotics first described by Duggar,[1] has been shown to be active against certain viruses and rickettsia,[2] gram-positive and gram-negative micro-organisms,[3] and to be even more effective than penicillin in experimental spirochetal infections, namely: relapsing fever (Borrelia novyi) and spirochetal jaundice, or Weil's disease (Leptospira icterohemorrhagiae).[4] This last-mentioned observation by Heilman prompted O'Leary, Kierland and Herrell [5] to investigate the effect of aureomycin on Treponema pallidum in man. It was concluded on the basis of a study in 2 patients with syphilis in an early stage that "aureomycin appears to have some antispirochetal activity when administered by the oral route."

On March 1, 1949 a study was initiated at the Chicago Intensive Treatment Center concerning aureomycin and its effect in early infectious dark field–positive syphilis. Twenty-seven patients had been treated by May 5, 1949. All patients in the study had dark field–positive lesions. The disease of 21 patients was diagnosed as secondary syphilis, of 3 as seropositive primary and of 3 as seronegative primary. The age range for the group was 17 through 39 years. Twenty-two patients were Negro, 1 Indian and 4 white. Twelve were women and fifteen men.

An initial oral priming dose of 2 Gm. (eight capsules of 250 mg. each) was given, and the dose was repeated four hours later; then 1 Gm. was given every four hours day and night until a total of 70 Gm. had been administered in a little over eleven days.

The effect of aureomycin in eradicating the surface spirochetes from dark field–positive lesions was studied

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Surgeon (R), United States Public Health Service (Dr. Harris).

In charge of the diagnostic section, Chicago Intensive Treatment Center (Dr. Weinstein).

Venereal disease control officer; medical officer in charge, Chicago Intensive Treatment Center (Dr. Plotke).

The aureomycin used in this study was supplied by Lederle Laboratories, Division American Cyanamid Company.

From the Chicago Intensive Treatment Center, Venereal Disease Control Program, Chicago Board of Health in cooperation with the United States Public Health Service.

Under the direction of Herman N. Bundesen, M.D., President, Chicago Board of Health, and Senior Surgeon (R), United States Public Health Service (inactive).

Medical director, Chicago Intensive Treatment Center; instructor in dermatology, University of Illinois College of Medicine and research associate, Kettering Foundation for Medical Research (Dr. Rodriquez).

[1] Duggar, B. M.; cited by Stearns, C. M.: First Effective Weapon Against Q Fever, Typhus and Spotted Fever Is Aureomycin: It May Become Best Drug of Decade, Science Illust. **3:** 26-28 (Oct.) 1948.

[2] Wright, L. T.; Sanders, M.; Logan, M. A.; Prigot, A., and Hill, L. M.: Aureomycin: A New Antibiotic with Virucidal Properties, J. A. M. A. **138:** 408-412 (Oct. 9) 1948.

[3] Braley, A. E., and Sanders, M.: Aureomycin in Ocular Infections: A Preliminary Report, J. A. M. A. **138:** 426-427 (Oct. 9) 1948. Bryer, M. S.; Schoenbach, E. B.; Chandler, C. A.; Bliss, E. A., and Long, P. H.: *Aureomycin: Experimental and Clinical Investigations,* ibid. **138:** 117-119 (Sept. 11) 1948. Paine, T. F., Jr.; Collins, H. S., and Finland, M.: Bacteriologic Studies of Aureomycin, J. Bact. **56:** 489-497 (Oct.) 1948.

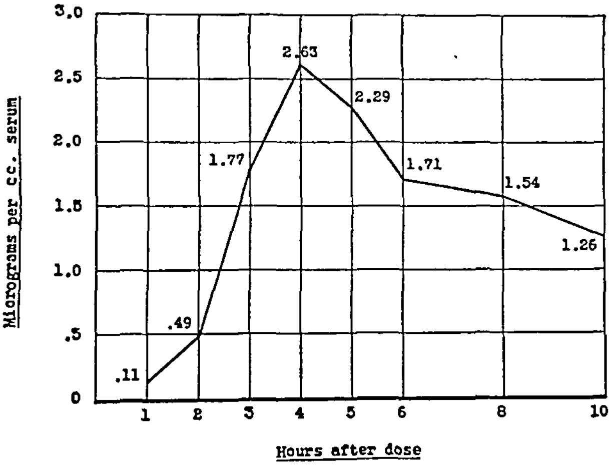
[4] Heilman, F. R.: Aureomycin in the Treatment of Experimental Relapsing Fever and Leptospirosis Icterohaemorrhagica (Weil's Disease), Proc. Staff Meet., Mayo Clin. **23:** 569-573 (Dec. 8) 1948.

[5] O'Leary, P. A.; Kierland, R. R., and Herrell, W. E.: The Oral Administration of Aureomycin (Dumycin) and Its Effect on Treponema Pallidum in Man, Proc. Staff Meet., Mayo Clin. **23:** 574-578 (Dec. 8) 1948.

in 16 patients. The earliest time interval necessary to render a lesion dark field negative was seventeen hours for 3 patients, and the longest was sixty-five hours for 2 patients. The average time for the group of 16 patients was thirty-nine hours.

Open lesions of syphilis healed completely in every instance, but the time interval seemed to be somewhat more prolonged as compared to that after treatment with the trivalent arsenical compounds or intramuscular aqueous penicillin. Secondary lesions of syphilis involuted completely.

Blood levels were studied in 7 patients after they had received one oral dose of 2 Gm. of aureomycin. Blood samples were drawn at the end of the first, second, third, fourth, fifth, sixth, eighth and tenth hours after the single oral dose; as shown in the accompanying chart and in table 1, the average readings were 0.11, 0.49, 1.77, 2.63, 2.29, 1.71, 1.54 and 1.26 micrograms per cubic centimeter of blood. The peak concentration occurred in the fourth hour; the level gradually diminished thereafter. The individual blood level curve describes a series of terraces in contrast to the spiking curve observed after the administration of aqueous penicillin.[6]



Average aureomycin blood levels in 7 patients after one oral dose of 2 Gm. of aureomycin.

No aureomycin activity was observed from samples of cerebrospinal fluid drawn from 4 patients in the first hour, 4 in the sixth and 4 in the ninth hour following a single oral 2 Gm. dose of aureomycin.

Evaluation of the serologic response to treatment with aureomycin is limited to 18 patients who had had post-treatment serologic follow-up observations for eight weeks (table 2). It is obvious that a definite seroreversal trend toward negativity is evident in most patients with a positive pretreatment serologic titer. It is too early to say more.

Four of 27 patients showed evidence of a febrile Herxheimer reaction. Cutaneous Herxheimer reactions were not evident in this group. A secondary fever (100.6 F. on the sixth day and 100,0 F. on the seventh) was observed in 1 patient. Nausea occurred at least one time for 26 of 27 patients and was accompanied with vomiting for 20 patients. The gastrointestinal disturbance seemed to occur most frequently on the second through the fifth days of treatment. Aluminum hydroxide gel given prior to each dose of aureomycin helped to minimize this type of reaction. On the basis of 1 patient (not included in this study) it was observed that cutting the dosage also caused diminution of the gastrointestinal complaints and thus permitted continuation of therapy. Anorexia was consistently associated with nausea. These symptoms in no instance necessitated discontinuation of treatment, although 2 patients were not given the drug for a twenty-four hour period of rest. There was no evident effect of aureomycin on the blood and genitourinary system as judged by pretreatment and post-treatment examinations of the blood and urine. It had been reported that oral administration of large doses of this antibiotic caused a suppression of the bacterial flora of the intestinal tract. This effect may possibly impair synthesis and absorption of essential nutriments. Accordingly, each patient was given one multivitamin capsule daily during the treatment period.

Table 1.—*Aureomycin Blood Levels of 7 Patients Given One Oral 2 Gm. Dose of the Antibiotic*

Patient	Micrograms Aureomycin per Cc. Serum Hours After Dose							
	1	2	3	4	5	6	8	10
1	0.0	0.2	0.8	0.8	0.8	0.8	0.4	0.4
2	0.0	0.4	1.6	3.2	1.6	1.6	1.6	3.2
3	0.0	0.4	0.8	1.6	0.8	0.8	0.8	0.8
4	0.0	0.0	0.4	1.6	1.6	1.6	0.8	0.4
5	0.0	0.0	0.8	1.6	1.6	0.8	0.8	0.8
6	0.8	1.6	1.6	3.2	3.2	3.2	3.2	1.6
7	0.0	0.8	6.4	6.4	6.4	3.2	3.2	1.6
Average	0.1	0.5	1.8	2.6	2.3	1.7	1.5	1.3

Table 2.—*Blood Serologic Titers of 12 Patients Given 70 Gm. Aureomycin Orally*

Patient	Blood Serologic Titers		
	Pre-treatment	After Beginning Date of Treatment	
		4 Weeks	8 Weeks
1	360	120	40
2	200	160	20
3	160	20	20
4	120	20	3
5	120	40	3
6	80	...	3
7	80	...	20
8	40	20	4
9	3	1	Neg.
10	Neg.	Neg.	Neg.
11	Neg.	Neg.	Neg.
12	Neg.	3	Neg.

Under conditions described in this report, one may conclude that aureomycin causes an initial satisfactory decline in the serologic titer, rids syphilis lesions of surface spirochetes in an average time of thirty-nine hours and, administered orally in the high dosage schedule outlined, causes mild to moderate degree of gastrointestinal disturbance in almost 100 per cent of the patients.

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[6] For 6 additional patients whose blood aureomycin levels were later examined at the fifteenth, eighteenth and twenty-fourth hours following one oral 2 Gm. dose of aureomycin, 2 ceased to show activity of the drug in the blood at the eighteenth and 1 at the twenty-fourth hour. One patient continued to show aureomycin activity of 0.8 micrograms and 2 patients of 0.1 microgram per cubic centimeter of serum, at the end of the twenty-fourth hour.

PREVENTIVE STERILIZATION IN 1948

CLARENCE J. GAMBLE, M.D.
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Surgical sterilization by excision of a portion of the fallopian or spermatic tubes is a form of long range preventive medicine which decreases the number of children inheriting psychosis or mental deficiency. Beginning in Indiana in 1907, laws for eugenic sterilizations at governmental expense have been passed by various legislatures until these are now on the statute books in twenty-seven states. Before the Virginia law was extensively applied, the head of the Department of Mental Hygiene carried a case into court to determine the constitutionality of the law. Not content with approval by the Supreme Court of Virginia, he eventually had it appealed to the United States Supreme Court. There, in 1927, it was confirmed that sterilization was not a cruel and unusual punishment and that provision had been made for the due process of law. Justice Oliver Wendell Holmes in rendering the now famous opinion said: "It is better for all the world if, instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the fallopian tubes. . . . Three generations of imbeciles are enough."

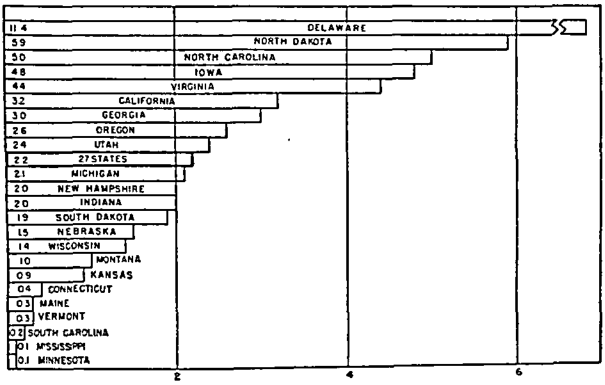

Fig. 1.—Sterilizations reported by state institutions in 1948, per 100,000 population.

Reports collected by the Human Betterment Foundation of California and by Birthright, Inc.[1] show the number of sterilizations reported by state institutions under these laws. By the end of 1948 the total was 49,207. California has used its law most extensively, having reported 19,042. Virginia was second with 5,366, and Kansas third with 3,001. In the twenty-seven states having sterilization laws, there were 1,336 such operations performed in 1948. In 28 per cent of the subjects these operations were performed because of insanity and in 67 per cent because of feeblemindedness. For comparisons between the states, the numbers reported from each state per 100,000 population have been calculated, with the use of the United States Census Bureau's estimate for 1948. These are shown in figure 1 and in the map (fig. 2). Delaware was the most active with 11.4 per 100,000, followed by North Dakota, North Carolina and Iowa. For the twenty-seven states, the 1948 operations were 2.2 per 100,000.

For an indication of the adequacy of the sterilization program, the operations reported may be compared with the annual number of new patients with psychosis or mental deficiency. In the twenty-seven sterilization-law states in 1946, the last year for which the information is available, there were 29,428 first admissions with psychosis and 14,959 deaths. The difference, which in the long run must equal the first discharges, was 14,469. This is 39 times the 368 sterilizations performed because of insanity. By a conservative estimate feebleminded persons constitute at least 1 per cent of the population. The assumption that they have an average life span of 50 years indicates that each year there are at least 20 additional feebleminded persons per 100,000 population. This is nine times the 901 sterilizations of the feebleminded reported for the twenty-seven states and nearly twice those in the most active state.

That tubectomy is an effective method of prevention of mental deficiency is indicated by a study by Johnson [2] in New Hampshire. Reviewing all accessible children of those sterilized for feeblemindedness in that state, she found that 36 per cent of them were mentally deficient and an additional 38 per cent were retarded.

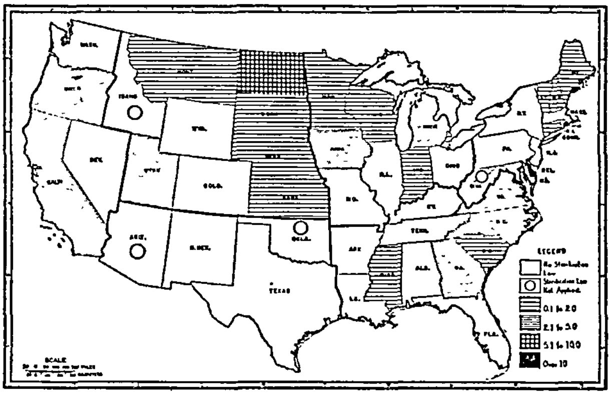

Fig. 2.—Sterilizations under state laws in 1948 per 100,000 population.

Segregation, an alternative method of protection from parenthood, involves great expense to taxpayers and loss of freedom to the individual. Butler [3] calculated that segregation until 1949 of the 5,112 mentally deficient persons sterilized at the Sonoma State School in California would have cost at least $21,831,300. Furthermore, it would have involved 72,771 patient years of institutionalization. Applying these proportions to the 24,957 feebleminded persons sterilized in the twenty-seven states, he estimated that segregation would have cost $101,000,000 for 350,000 patient years.

The major obstacle to the use of tubectomy for this form of preventive medicine appears to be lack of knowledge on the part of the public of the nature of the operation. Having heard only of the barnyard form of sterilization by castration, they do not understand that the only result which the patient can detect is the desired one that children are not born. If each physician will explain this fact to those of the laity with whom he has contact, protection of the next generation from the inheritance of psychosis and mental deficiency will become more complete.

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[1] Reports of Human Betterment Foundation of California, Publication no. 5, Princeton, N. J., Birthright, Inc., 1949.

[2] Johnson, B. S.: A Study of Sterilized Persons from the Laconia State School, Am. J. Ment. Deficiency, to be published.

[3] Butler, F. O.: The Mental Defective and His Future, Am. J. Ment. Deficiency, to be published.

Special Article

THE PROBLEM OF MALPRACTICE

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Los Angeles

Malpractice constitutes a real threat to the members of all the healing professions. Doctors of medicine were attacked first and are still the primary targets. In 1937 about 4,000 of them were sued for malpractice in the United States. The plague spread to involve dentists, osteopaths, chiropractors, naturopaths and nurses. Now, even veterinary surgeons are being assailed with malpractice suits with increasing frequency.

Public confidence in the medical professions is seriously affected by the ill will and misunderstanding engendered by these frequently unfounded and sometimes malicious onslaughts against medical practitioners. Past experience teaches that in the event of another period of economic recession it must be anticipated that the number of claims will greatly increase.

No physician is immune to a malpractice suit. Obviously a physician cannot be justly accused of malpractice if he cares for every patient with painstaking attention to the requirements of good practice. However, the exercise of even the highest degree of skill and care will not ward off the unjust claim. A point has been reached at which any physician is unwise who does not routinely take all the available precautions to safeguard himself against the unjust accusation of malpractice.

The law requires that every person act with due or ordinary care toward his fellows. Failure so to act constitutes negligence. Due or ordinary care means the degree of care commonly possessed and exercised by the ordinarily prudent person in the conduct of all his activities. A standard is thus established which all must meet. Anyone in everyday activity may be adjudged negligent if an injury to another person or another's property results from failure to do something that the average person would do or from doing something that the average person would refrain from doing in the same circumstances.

There is a legal standard, too, which the professional man must meet in carrying out his professional activities. The standard is always what the ordinary, reputable practitioner, in the same field of practice, in the same or in a similar locality, would do and what he would refrain from doing in a similar case.

The failure of a medical practitioner to meet the standard of practice, with injury resulting to his patient, constitutes professional negligence. Professional negligence is called malpractice by the courts.

PHYSICIAN-PATIENT RELATIONSHIP

An analysis of physician-patient cases reveals that the courts almost uniformly hold that a physician is bound (1) to use reasonable care, attention and diligence in the performance of his professional services; (2) to act according to his best judgment in treating his patients, and (3) to possess and exercise the degree of skill and of learning which is ordinarily possessed and exercised by members of his profession in the same or in a similar locality. Failure to perform his duty in these respects is regarded as malpractice. But if the physician has fully complied with his duty and has exercised the requisite degree of care and skill, he is not ordinarily held liable for mere error of judgment (if there is any) in the selection of the course of treatment to be followed. The physician is justified in his selection of a method of treatment if it is one that would be approved by even a respectable minority of his reputable colleagues in the locality. However, he cannot excuse himself on the theory of mere error of judgment if he fails to inform himself of facts by a proper examination of the patient.

One who holds himself out as a specialist and who claims to be expert in a particular field of practice is held to a higher degree of care and skill than is an ordinary practitioner. He must possess and exercise the degree of care and skill commonly possessed and exercised by the specialist in the particular field of practice.

Unless he so expressly agrees and undertakes, a physician is not held to be an insurer or warranter of the results of his treatment. A good result is not impliedly guaranteed. Nonsuccess or unsatisfactory results will not alone establish the elements of legal detriment. This point is well illustrated in a case[1] in which the court said that a physician cannot be held responsible for the failure of the patient to respond satisfactorily to treatment or to make rapid progress toward recovery if the physician used a treatment which was recognized and customary in the medical profession and if he employed reasonable skill and diligence.

The patient must always authorize or consent to the treatment which is administered. Above all, there must be consent to operation. Oral consent is valid, but, obviously, proof of consent is easier when the authorization is in written form. With reference to consent, a New York court in a controlling case[2] said that every human being of adult years and sound mind has a right to determine what shall be done with his own body and that a surgeon who performs an operation without his patient's consent commits an assault for which he is liable in damages.

In an operation on husband or wife the consent of the one being operated on is sufficient.[3] However, in an operation on either husband or wife which is likely to result in sterility, it is desirable to secure the written consent of both the husband and the wife. It should be borne in mind, too, that it is hazardous to sterilize any person except on a positive medical indication.

In cases in which an operation is made compulsory by law (such as vaccination or sterilization[4]) the law furnishes the consent. If an operation is unlawful, consent to the performance thereof does not absolve the surgeon from liability.

The consent of a person non compos mentis is no consent at law. The consent of the one who stands in the position of guardian to such a person is required for performance of an operation. If the patient is a minor, consent to operation must be obtained from the parents or guardian.

Read as one of a series of lectures before all applicants for membership in the Los Angeles County Medical Association.

[1] McCartney v. Hyman (Pa.), 4 Atl. (2d) 581.
[2] Schloendorff v. New York Hospital, 211 N. Y. 125.
[3] Rytkonen v. Lojacono (Mich.), 257 N. W. 703; Burroughs v. Crichton, 48 App. D. C. 596.
[4] Under Eugenic Sterilization Statutes.

In an emergency which justifies immediate action for the preservation of the life or health of a patient, and in which it is not practicable to obtain his consent or the consent of any one authorized to speak for him, it is the duty of the attending physician to perform such operation as good surgical practice demands without such consent.[5]

In the absence of evidence to the contrary there is a presumption that a physician has performed the duty undertaken by him with reasonable care and skill. Negligence or want of skill must be affirmatively proved. The rule is well established that a physician cannot be held liable for the death of a patient under his treatment where there is no evidence to show negligence or lack of skill on his part to overcome the *prima facie* case in his favor. In any case, however, when the plaintiff proves by a preponderance of all of the evidence that he suffered injury because the physician failed to act in accordance with the standard of practice in the community, he may recover a judgment for monetary damages against the physician.

In the ordinary case legal proof of malpractice requires that some physician testify on behalf of the patient. This requirement is readily understandable, for only a physician is competent to say what is or is not good practice, either in diagnosis or treatment. A lay person may state what was done, but only a physician can testify as to the propriety of the things done. Ordinarily then, a malpractice action will fail unless some physician comes into court and gives testimony which, in effect, condemns the defendant physician's conduct of the case.

Expert testimony is unnecessary in actions based on allegation of operation without consent, invasion of the right of privacy or breach of warranty to cure or to effect a certain result. In matters which are within the common knowledge and understanding of laymen, expert testimony is not necessary. Further, whenever a practitioner acknowledges fault or negligence, by his own statement or admission, expert testimony may not be required.

EXTRACTS FROM MALPRACTICE CASES

Extracts from a few cases will illustrate the foregoing comments:

1. In a North Dakota case[6] the court said that, as a general rule, it is improper to submit a malpractice case to a jury without expert testimony to establish the standard according to which the jury is to judge the conduct of the defendant.

2. In a California case[7] the court said that standards of practice of physicians in a community can be established only by the testimony of experts.

3. In an Iowa case[8] the court said that the testimony of laymen or nonexperts cannot determine whether or not a physician exercises the degree of care and skill required of him in the treatment of a particular patient, for only those learned in the profession can say what should have been done or that what was done ought not to have been done.

4. In a Nebraska case[9] it was held that when a case demands the employment of scientific technic of which a layman can have no knowledge, a charge of negligence must be proved by expert witnesses.

5. In a Kentucky case[10] the court said that the right of recovery in a malpractice action can be established only by the testimony of experts unless the evidence shows an act or an omission within the common knowledge and understanding of laymen.

6. In an Indiana case[11] it was held that when the patient proves that an incision was closed over a laparotomy sponge used in an abdominal operation, expert testimony concerning negligence of the operating surgeon is unnecessary.

7. In a Kansas case[12] it was held that negligence in not setting or treating a badly dislocated elbow need not be established by a medical witness, since it is a matter of common knowledge that such an injury needs treatment.

8. In a California case[13] it was said that it is common knowledge that the removal of the uvula and of a portion of the soft palate is no part of a tonsillectomy.

9. In Illinois[14] a physician was sued as the result of a burn sustained by a patient from an electrotherapeutic machine. The plaintiff's mother had stated to the physician that the plate was loose and that the burn was due to carelessness. The defendant's response to her, "I know it and I can't tell you how bad I feel about it," was admissible as an admission against interest.

10. In a Washington case[15] the court said that the law is well settled that a physician may specially contract to effect a certain result and that he then becomes liable on his contract for failure to fulfil his agreement.

There is no doubt that a physician has a duty to make a sufficiently full disclosure of all of the pertinent facts of a case so that the patient may be in a position to decide, intelligently, whether to submit to any original or subsequent treatment. This conclusion is supported in many cases:

1. In an Oklahoma case[16] the point was made that it is the physician's duty to exercise the highest degree of good faith in dealing with his patients.

2. In a California case[17] the court said that the confidential relationship of physician and patient imposes on the physician the duty of refraining from fraudulent concealment with respect to matters on which he is consulted by the patient.

3. In a number of cases[18] from several states the courts have held that, if the attending physician knows that he cannot accomplish a cure or that the treatment adopted will probably be of no benefit, it is his duty to advise his patient of these facts.

The doctrine of *res ipsa loquitur* is of increasing importance in the law of malpractice. *Res ipsa loquitur* (literally, the thing speaks for itself) is a doctrine of the general law of negligence. It is held applicable whenever one person is injured by an instrumentality entirely in the control of another person, the use of which does not ordinarily result in injury if the person in control exercises due care.

Generally, as has been indicated, the proof of a physician's negligence must be established by the testimony of medical expert witnesses. The application of the doctrine of *res ipsa loquitur* creates in the case an inference of negligence on the part of the defendant, and it relieves the plaintiff of the necessity of proving the alleged malpractice by the testimony of experts. It places on the defendant the burden of making explanation, if he can, to offset the inference of negligence; and by the majority rule a question is created for the jury, regardless of any and all evidence presented by the defendant.

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[5] 48 C. J. 1131; Jackovach v. Yocum (Iowa), 237 N. W. 444.
[6] Whitson v. Hillis (N. D.), 215 N. W. 480.
[7] McNamara v. Emmons, 36 Calif. App. (2d) 199.
[8] Nelson v. Sandell (Iowa), 209 N. W. 440.
[9] Winters v. Rance (Neb.), 251 N. W. 167.
[10] Stacy v. Williams (Ky.), 69 S. W. (2d) 697.
[11] Funk v. Bonham (Ind.), 183 N. E. 312.
[12] McMillen v. Foncannon (Kan.), 273 Pac. 237.
[13] Thomsen v. Burgeson (Calif.), 79 Pac. (2d) 136.
[14] Adamsen v. Magnelia, 280 Ill. App. 418.
[15] Brooks v. Herd (Wash.), 257 Pac. 238.
[16] Mattingly v. Sisler (Okla.), 175 Pac. (2d) 796.
[17] Pashley v. Pacific Electric Co. (Calif.), 153 Pac. (2d) 325.
[18] Tvedt v. Haugen (N. D.), 294 N. W. 183; Lewis v. Durnell (Maine), 24 Atl. 945; Logan v. Field, 75 Mo. App. 594; Benson v. Dean, 232 N. Y. 52; Mernin v. Cory (Calif.), 79 Pac. 174.

The doctrine of *res ipsa loquitur* has been held applicable in the field of malpractice chiefly in cases which involve (1) slipping instruments, (2) sponges left in the tissues, (3) burns from heating modalities, (4) roentgen radiation injuries (generally limited to cases wherein the roentgen ray is being used diagnostically), (5) infection through the use of an unsterilized needle or instrument and (6) injury to a portion of an anesthetized patient's body outside the field of treatment or operation.

The doctrine of *res ipsa loquitur* has been held applicable in cases such as those which follow:

1. In a Minnesota case [19] a patient's tongue was cut by an electrically driven instrument.
2. In a Washington case [20] the court held that a surgeon is negligent as a matter of law when, in performing an operation, he leaves a sponge in the wound and there is no possibility of any good resulting therefrom.
3. In a New Jersey case [21] the court said that, notwithstanding the nurse's count, a duty remained with the defendant to examine independently to make sure that no foreign body remained in the patient's body.
4. In a Montana case [22] the surgeon was employed to remove a fibroid tumor and the appendix, and the patient sustained a burn on the chest while anesthetized.
5. In cases from many states [23] negligence was assumed when injury followed diagnostic use of roentgen rays.

On the other hand, the doctrine of *res ipsa loquitur* has been held not to apply in the following cases:

1. In a Minnesota case [24] the court said that the failure on the part of a physician to effect a cure by treatment and operation was not ground for the application of the doctrine, since such failure occurs under the most skilful and careful treatment.
2. In another Minnesota case [25] negligence was not assumed from a claim that death resulted from the injection of an anesthetic agent.
3. In a Washington case [26] the doctrine was held not applicable when the patient's bladder leaked after an operation for the removal of the uterus.
4. In a Minnesota case [27] the doctrine was held inapplicable in action against the surgeon when expert testimony disclosed that a lesion discovered on the patient's thigh after operation could have resulted from a cause or causes other than the alleged burn from a hot water bottle.
5. In an Alabama case [28] it was held that the doctrine does not apply to the mere fact of the occurrence of a blood infection, *no matter* how closely in time the infection may follow a medical treatment.

There is a threatening and obvious trend toward extending the doctrine of *res ipsa loquitur* to embrace more and more cases. Unless this trend is checked, the occurrence of a bad result will in itself give rise to an inference that the attending physician was negligent. In such a situation, every physician who is foolhardy enough to practice at all will for all practical purposes become an insurer of the results of his treatment.

A physician's liability for negligence or malpractice extends to acts or omissions of his employees, within the scope of the employment. He is also, of course, liable for the professional acts of a partner. Further, he is liable for the acts of hospital personnel, as far as such acts occur under his direct supervision and control; thus the operating surgeon, and not the hospital, is liable for negligence in the operating room.

Whenever a medical practitioner enters a case in response to a request that he render professional services, he is legally bound to give (or to see that there are given) such services as the case requires until they are no longer needed; he is freed of responsibility only if he is discharged or if he withdraws from the case. This responsibility is illustrated in 2 typical cases:

In a North Dakota case [29] the court said that part of the physician's correct treatment of a patient is the careful and proper determination of the moment when relation with the patient shall end.

In an Alabama case [30] it was held that when a physician undertakes to treat a patient whose condition he knows to be such that without continuous or frequent attention injurious consequences may result, he must either render such attention himself or see that some other competent person does so.

In all cases sound professional judgment must be exercised to provide, in accordance with the standard of practice, sufficient observation, investigation and treatment.

Whenever the rendition of professional services is followed by a less than perfect end result, a potential malpractice claim exists. When a poor result is accompanied by an unfounded suggestion that faulty treatment was administered, a malpractice claim can almost automatically be expected. This analysis of the situation is not pleasant, but it is realistic. Perhaps little can be done to eliminate poor results; however, it is not only possible but imperative that the factor of unfounded criticism be eliminated.

More than 75 per cent of all malpractice cases are precipitated by some medical practitioner's criticism of the work done or the result obtained by another. Such unethical and destructive criticism obviously must be stopped.

To be sued for malpractice is a miserable experience for any physician. His reputation and his professional integrity are assailed and put in jeopardy. The mere filing of a malpractice action is in itself injurious to him. For example, it is altogether different than being sued for allegedly negligent driving of an automobile. In addition to the mental and emotional stress and loss of time to the physician, the increasing number of unjustified claims is imposing a mounting burden of costs. Furthermore, and no less significant, there is inevitably a lowering of public confidence in the medical professions.

Concrete evidence shows that most of the malpractice claims which are brought against members of the healing professions are not meritoriously founded—that is, the majority of such claims are not honestly and factually justifiable. Moreover, the targets of these actions are not exclusively or generally charlatans or quacks. On the contrary, more than half of all the defendants in these actions are above the median in experience, reputation and ability in their respective fields of practice.

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[19] Ellering v. Gross (Minn.), 248 N. W., 330.

[20] McCormick v. Jones (Wash.), 278 Pac. 181.

[21] Stawicki v. Kelley (N. J.), 174 Atl. 896.

[22] Vonault v. O'Rourke (Mont.), 33 Pac. (2d) 535.

[23] Lewis v. Casenburg (Tenn.), 7 S. W. (2d), 808; Shockley v. Tucker (Iowa), 103 N. W. 360; Hamilton v. Harris (Texas), 223 S. W. 533.

[24] Johnson v. Colp (Minn.), 300 N. W. 791.

[25] Johnson v. Arndt (Minn.), 243 N. W. 67.

[26] Brear v. Sweet (Wash.), 284 Pac. 803.

[27] Wallstedt v. Swedish Hosp. (Minn.), 19 N. W. (2d) 426.

[28] Woodlawn Infirmary, Inc. v. Byers (Ala.), 112 So. 831.

[29] *Halverson v. Zimmerman (N. D.), 232 N. W. 754.*

[30] Jackson v. Burton (Ala.), 147 So. 414.

These charges of malpractice have become so common that in certain localities every patient with a less than perfect end result is a potential malpractice claimant. If a physician is intelligently malpractice-conscious, he must and will give thought to safeguarding himself while he is treating a patient, because an unjustifiable claim may eventuate from the case. This unwholesome situation is steadily becoming worse. Obviously, the public interest is seriously and deleteriously affected by it.

PREVENTION OF MALPRACTICE SUITS

Prevention is the best defense against malpractice. The following briefly outlined measures have been found to be effective and have been recommended, in whole or in part, by all who have given consideration to the problem of malpractice:

1. The physician should care for every patient with scrupulous attention to the requirements of good medical practice.

2. The physician must know his legal duty to the patient.

3. The physician must avoid destructive and unethical criticism of the work of other physicians.

4. "Ideal" medical records should be kept in every case: records that would be presentable when offered in court; records that clearly show what was done and when it was done; records that indicate that nothing was neglected and that the care given fully met the standard demanded by the law. If any patient discontinues treatment before he should, or fails to follow instructions, the record should show it; a good method is to file a carbon copy of the letter which advises the patient against the unwise course.

5. The physician should be careful to avoid making any statement which constitutes or which might be construed as an admission of fault on his part. Such an admission, which is usable against the physician, might be made to a third party as well as to the patient at any time before the trial. Such an admission may be made by an agent or employee of the physician during the course and within the scope of the employment. It is important to instruct employees to make no statements.

6. The physician should exercise tact as well as professional ability in handling his patients. A proper professional manner and a sound attitude should be maintained at all times, both toward the patient and toward the patient's family. The attentive physician may early sense some unsatisfactory and disturbing undercurrent, which may be prevented by the institution of protective measures, from developing into something much more unpleasant. Thus, if the patient is not doing well, consultation may be suggested; if the patient is dissatisfied or complaining, or if the family's attitude indicates dissatisfaction, consultation should be demanded. The use of a consultant affords, in any case, great protection against a malpractice claim.

7. The physician should refrain from over-optimistic prognoses and should avoid promising too much to the patient.

8. The physician should advise his patients of any intended absence from practice and should recommend, or make available, a qualified substitute.

9. The physician should unfailingly secure written consent for operation and for autopsy.

10. There should be careful supervision of assistants and employees and great care in the delegation of duties to them.

11. The physician should have some knowledge of the Statute of Limitations and of its significance.

12. In his selection of patients the physician should limit himself to such fields as are well within his qualifications. He should keep abreast of progress in the medical profession.

13. The physician should keep inviolate all confidential communications.

14. He should frequently check the condition of his equipment and make use of every available safety installation.

15. In the treatment of the patient the physician must not experiment.

16. The physician must be careful to render sufficient care to his patient in general instructions, frequency of visits, clinical and roentgen ray laboratory investigations and the like. Moreover, every precaution should be instituted for the protection of those caring for the patient and of all other contacts.

17. The patient must not be abandoned. The physician-patient relation can be terminated without liability only in certain ways and under certain conditions.

18. The physician should never reveal that he carries professional liability insurance. He should never write a letter or make any statement with reference to a malpractice claim, except on the recommendation of his legal adviser. Immediately on being advised of even the possibility of suit he should consult with his attorney.

19. The physician should arrive at an understanding in the matter of fees. Misunderstanding in this matter, particularly when the question of excessive fees arises, contributes an avoidable element of risk.

20. The physician should secure legal advice if he is called to attend a coroner's inquest as a witness in a case in which he has been in professional attendance.

21. The physician should realize that because of the possibility of error in transmission, it is dangerous to telephone a prescription.

22. The physician should realize that it is hazardous to sterilize any patient, except when a medical indication exists.

23. Except in actual emergency, no female patient should be examined unless a third person is present. There is no more serious or destructive charge in the "malpractice book" than that of undue familiarity; and the only way to avoid claims of this sort seems to be to have some one else present during all examinations.

CONCLUSION

Those who have realistically viewed the problem have realized that there is no malpractice Santa Claus, that the problem will be solved only by the affirmative and purposeful action of the professional groups. Physicians must learn what they may do to safeguard themselves and must put into effect every possible precaution against unjust malpractice accusations. The vast majority of malpractice suits can be avoided by scrupulous attention to the requirements of good practice, provided that this attention is accompanied by an equally scrupulous care for the reputation of fellow medical practitioners.

1925 Wilshire Boulevard (5).

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M. D., *Secretary.*

FOOD, EPIDERMAL AND OTHER EXTRACTS (See New and Nonofficial Remedies 1949, p. 2).

The following allergens have been accepted:

HOLLISTER-STIER LABORATORIES, SPOKANE 8, WASH.

Food, Epidermal and Miscellaneous Allergens: All the items in the list are marketed for cutaneous or scratch tests, in dropper applicator vials containing 1 cc., 2 cc and 5 cc. Those items with an asterisk (*) are marketed for intradermal testing and therapeutic use. Intradermal extracts are supplied as rubber-capped vials of 2 cc. and 5 cc. Standardization is by milligrams of total nitrogen except for allergens supplied to be used undiluted. Therapeutic extracts are marketed as treatment sets of four vials containing, respectively, dilutions of 1:10,000, 1:1,000, 1:100 and 1:10 and as single vials of 2 cc., 5 cc., 10 cc. and 20 cc. quantities in any of the aforementioned dilutions.

Foods

- Allspice
- Almond *
- Anchovy
- Apple *
- Apricot *
- Arrowroot *
- Artichoke *
- Asparagus *
- Avocado *
- Bacon *
- Banana *
- Barley *
- Bay leaf
- Beef *
- Beet *
- Blackberry *
- Blackcap
- Black-eyed pea
- Black pepper *
- Black walnut
- Bran
- Brazil nut *
- Broccoli *
- Brussels sprouts *
- Buckwheat *
- Cabbage *
- Calves' liver *
- Cantaloupe *
- Caraway seed *
- Carrot *
- Cascara bark
- Cashew nut *
- Catfish *
- Cauliflower *
- Celery *
- Cheese (American) *
- Cherry *
- Chestnut
- Chicken *
- Chicory
- Chili pepper
- Chives
- Chocolate *
- Cinnamon *
- Citron
- Clam *
- Cloves *
- Cocoa *
- Coca-cola
- Cocoanut *
- Cod fish *
- Cods' liver *
- Coffee *
- Corn *
- Crab *
- Cranberry *
- Crappie fish
- Cucumber *
- Curley kale
- Currant *
- Curry powder
- Date *
- Dill
- Duck *
- Egg white *
- Egg (whole) *
- Egg yolk *
- Eggplant *
- Elk meat
- Endive *
- English walnut *
- Evaporated milk *
- Fig *
- Filbert *
- Flounder *
- Frog legs
- Garlic *
- Gelatin *
- Ginger *
- Goose *
- Gooseberry
- Grape *
- Grapefruit *
- Green pepper *
- Haddock *
- Halibut *
- Herring *
- Honey *
- Honey dew melon *
- Hops *
- Horse radish *
- Huckleberry *
- Juniper berry
- Kidney bean *
- Kohl-rabi
- Lamb *
- Leek
- Lemon *
- Lentil
- Lettuce *
- Licorice
- Lima bean *
- Limburger cheese
- Lime *
- Ling cod
- Lobster *
- Loganberry
- Mackerel *
- Malt *
- Milk (cow) *
- Milk (cow) albumin *
- Milk (cow) casein
- Milk (cow) whey
- Milk (goat) *
- Mint *
- Mushroom *
- Mustard *
- Mutton
- Navy bean *
- Nectarine
- Nutmeg *
- Oat *
- Okra *
- Olives (green)
- Olives (ripe) *
- Onion *
- Orange *
- Oyster *
- Paprika
- Parsley *
- Parsnip *
- Pea *
- Peach *
- Peanut *
- Pear *
- Pecan *
- Peppermint
- Perch
- Persimmon
- Pickerel
- Pike *
- Pimento *
- Pineapple *
- Pistachio
- Plum *
- Popcorn
- Poppy seed
- Pork *
- Potato *
- Prune *
- Psyllium seed
- Pumpkin *
- Quince
- Rabbit *
- Raddish *
- Raisin *
- Raspberry *
- Red pepper *
- Red snapper
- Rhubarb *
- Rice *
- Roquefort cheese *
- Rutabaga
- Rye *
- Sage *
- Salmon *
- Sardine *
- Scallops *
- Sea bass *
- Sea perch
- Sesame seed *
- Shad
- Shrimp *
- Smelt
- Sole *
- Soy bean *
- Spinach *
- Squash *
- Strawberry *
- String bean *
- Sugar beet *
- Sugar cane *
- Sweetbreads
- Sweet potato *
- Swiss chard
- Swiss cheese *
- Tangerine
- Tapioca *
- Tea *
- Thyme
- Tomato *
- Trout *
- Tuna fish *
- Turkey *
- Turmeric
- Turnip *
- Turnip greens
- Vanilla *
- Veal *
- Watercress
- Watermelon *
- Wax bean
- Wheat *
- Whitefish *
- Yam
- Yeast (baker's) *
- Yeast (brewer's) *
- Youngberry

Epidermal Allergens

- Angora wool *
- Beaver
- Camel's hair *
- Canary feathers
- Caracul
- Cat hair *
- Cattle hair *
- Chicken feathers *
- Deer hair
- Dog hair *
- Duck feathers *
- Ermine
- Feather mixture *
- Fox *
- Goat hair *
- Goose feathers *
- Guinea pig hair
- Hog hair *
- Horse dander *
- Hun, stone martin
- Kolinsky
- Leopard
- Marmot
- Marten
- Mink *
- Mohair
- Muskrat *
- Nutria
- Opossum
- Persian lamb
- Pony
- Rabbit hair *
- Racoon
- Seal (Alaskan)
- Seal (Hudson)
- Sheep wool *
- Skunk
- Squirrel

Miscellaneous Allergens

- Alfalfa hay
- Analine
- Bee
- Carbon paper
- Cedar
- Chalk *
- Chamois skin
- Chicle *
- Cocoanut fiber
- Cotton *
- Cotton linters
- Cotton mattress
- Cottonseed *
- Derris powder
- Excelsior
- Fir
- Flax
- Flaxseed *
- Glue *
- Glue (fish)
- Grain mill dust *
- Hemp
- Henna *
- Horse serum *
- House dust *
- Human hair *
- Jute *
- Kapok *
- Karayagum *
- Cleansing tissue *
- Leather
- Lycopodium *
- Moth
- Newspaper (plain) *
- Newspaper (color) *
- Newspaper (roto.) *
- Nylon *
- Orris root *
- Pine (white)
- Pine (yellow)
- Pyrethrum *
- Quince seed *
- Rayon *
- Rice powder *
- Sea moss
- Silk *
- Sisal *
- Smoke (cigar) *
- Smoke (cigaret) *
- Smoke (tobacco) *
- Smoke (mixed)
- Snuff
- Tobacco *
- Tragacanth
- Upholstery dust *
- Control
- Yellow jackets

The extracts of foods, epidermals and miscellaneous allergens, Hollister-Stier, are prepared as follows: All substances are reduced to small particle sizes after those containing moisture are dehydrated at low temperature. To prepare extract for scratch tests and therapeutic use, 1 part of dehydrated material is extracted in 10 parts of a menstruum containing 50 per cent glycerin, 5 per cent sodium chloride and 45 per cent distilled water, with agitation for five days at controlled temperature. The extract is clarified and sterilized by Seitz filtration. Sterility tests in accordance with requirements of the National Institutes of Health are made. The final extract is a 1:10 dilution of the allergen.

To prepare intradermal extracts, the dehydrated material is extracted with buffered saline solution with mechanical agitation for twenty-four hours. The extract is clarified and Seitz filtered. The total nitrogen is determined by the Kjeldahl method, and the extracts are diluted to required strength with sterile buffered saline solution and tested for sterility.

FUNGUS EXTRACTS (See New and Nonofficial Remedies 1949, p. 9).

The following allergens have been accepted:

HOLLISTER-STIER LABORATORIES, SPOKANE 8, WASH.

Fungus Allergenic Extract: These extracts are marketed for scratch tests in dropper applicator vials of 1 cc., 2 cc. and 5 cc. For intradermal tests 2 cc. and 5 cc. rubber-capped vials are supplied. Therapeutic extracts are marketed in treatment sets of four vials, consisting of dilutions 1:10,000, 1:1,000, 1:100 and 1:10; also, 2 cc., 5 cc., 10 cc. and 20 cc. quantities of any of the aforementioned dilutions are available.

- Aschorion schoenleinii
- Alternaria
- Aspergillus flavus
- Aspergillus fumigatus
- Aspergillus mix
- Aspergillus nidulans
- Aspergillus niger
- Aspergillus terreus
- Botyritis
- Cephalosporium cerebriforme
- Cephalothecium roseum
- Chaetomium globosum
- Cladosporium
- Epidermophyton inguinale
- Fusarium
- Helminthosporium
- Hormodendrum
- Microsporum lanosum
- Mold mixed
- Monilia albicans
- Monilia sitophila
- Mucor circinelloides
- Penicillium digitatum
- Penicillium expansum
- Penicillium glaucum
- Penicillium mix
- Penicillium notatum
- Penicillium roseum
- Rhizopus
- Torula pink
- Trichophyton

Fungus extracts, Hollister-Stier, are prepared as follows: The fungi are grown on special mediums, designed to increase spore production, for several weeks. The spores and mycelium are removed, drained of liquid and dried without heat. Ten grams of dried fungus spores and mycelium are added to 100 cc. of a menstruum consisting of 50 per cent glycerin, 5 per cent sodium chloride and 45 per cent distilled water and mixed in a Waring blender. Mechanical agitation is applied for several hours, and extraction is continued for five days at controlled temperature. The extract is clarified and Seitz filtered. Tests for sterility are performed according to the methods of the National Institutes of Health. The final extract is a 1:10 dilution of the dried fungus material. The required dilutions are prepared with buffered saline solution for intradermal extracts, and glycerosaline solution for therapeutic extracts. Sterility tests are made at intermediate points and when the final containers are being filled.

OXIDIZED CELLULOSE (See New and Nonofficial Remedies 1949, p. 436).

The following dosage form has been accepted:

JOHNSON & JOHNSON, NEW BRUNSWICK, N. J.

Hemo-Pak Hemostatic Absorbable Gauze Sponge (8 ply): 3 by 3 inches.

U. S. patent 1,939,235 and 2,232,990.

PYRIDOXINE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, p. 558).

The following dosage forms have been accepted:

International Vitamin Division, Ives-Cameron Company, Inc., New York 16

Tablets Pyridoxine Hydrochloride: 25 mg. and 50 mg.

Lincoln Laboratories, Inc., Decatur, Ill.

Solution Pyridoxine Hydrochloride: 50 mg. per cc. in 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

The Upjohn Company, Kalamazoo 99, Mich.

Tablets Pyridoxine Hydrochloride: 50 mg.

PENICILLIN FOR PARENTERAL USE IN AQUEOUS SOLUTION (See New and Nonofficial Remedies 1949, p. 150).

The following dosage forms have been accepted:

R. E. Dwight and Co., Des Moines 9, Iowa

Crystalline Sodium Penicillin G: 100,000, 200,000, 500,000 and 1,000,000 unit vials.

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Crystalline Potassium Penicillin G: 100,000, 200,000, 500,000 and 1,000,000 units in 20 cc. vials.

PENICILLIN FOR PARENTERAL USE FOR PROLONGED ACTION (See New and Nonofficial Remedies 1949, p. 153).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Crystalline Procaine Penicillin G in Aqueous Suspension: 300,000 units (packaged with or without 1 cc. ampul of water for injection), 1,500,000 and 3,000,000 unit vials.

R. E. Dwight and Co., Des Moines 9, Iowa

Crystalline Procaine Penicillin G in Oil: 300,000 units per cc. in peanut oil with 2 per cent W/V aluminum monostearate in 10 cc. vials.

PENICILLIN FOR ORAL ADMINISTRATION (See New and Nonofficial Remedies 1949, p. 156).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Soluble Tablets Crystalline Potassium Penicillin G: 50,000 units.

Commercial Solvents Corporation, New York 17

Soltabs Crystalline Potassium Penicillin G: 100,000 units.

PENICILLIN FOR INHALATION THERAPY (See New and Nonofficial Remedies 1949, p. 157).

The following dosage form has been accepted:

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Nebutabs Crystalline Sodium Penicillin G: 100,000 units. For use in the preparation of solutions for nebulization. Packaged with or without an oral nebulizer or with a nasal nebulizer.

HUMAN IMMUNE GLOBULIN-U. S. P. (See New and Nonofficial Remedies 1949, p. 473).

The following dosage form has been accepted:

Pitman-Moore Company, Division of Allied Laboratories, Inc., Indianapolis 6

Immune Serum Globulin (Human): 2 cc. and 10 cc. vials. Preserved with ethylmercurithiosalicylate 1:10,000.

METHAMPHETAMINE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, p. 227).

The following dosage forms have been accepted:

The Upjohn Company, Kalamazoo 99, Mich.

Elixir Desoxyephedrine Hydrochloride: 0.66 mg. per cc. in 500 cc. bottles.

Tablets Desoxyephedrine Hydrochloride: 5 mg.

PERTUSSIS VACCINE ALUM PRECIPITATED (See New and Nonofficial Remedies 1949, p. 506).

The following dosage form has been accepted:

The National Drug Company, Philadelphia 44

Pertussis Vaccine (Alum Precipitated): 300,000 million *H. pertussis* per cc. in 6 cc. vials (four immunizations). Preserved with sodium ethylmercurithiosalicylate 1:10,000.

VITAMIN D_2 (See New and Nonofficial Remedies 1949, p. 565).

The following dosage forms have been accepted:

Winthrop-Stearns, Inc., New York 13

Capsules Drisdol with Vitamin A: 5,000 U. S. P. units of vitamin A and 1,000 U. S. P. units of vitamin D in corn oil.

Solution Drisdol with Vitamin A: 50,000 U. S. P. units of vitamin A and 10,000 U. S. P. units of vitamin D per Gm., in sesame oil in 10 cc. and 50 cc. bottles.

U. S. patent 2,030,792; U. S. trademark 333,661.

TESTOSTERONE PROPIONATE-U. S. P. (See New and Nonofficial Remedies 1949, p. 407).

The following dosage form has been accepted:

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Solution Testosterone Propionate with 3% Benzyl Alcohol: 25 mg. and 50 mg. per cc. in sesame oil in 10 cc. vials. Preserved with 0.1 per cent propylparaben.

THIAMINE HYDROCHLORIDE-U. S. P. (See New and Nonofficial Remedies 1949, p. 549).

The following dosage forms have been accepted:

Gold Leaf Pharmacal Co., New Rochelle, N. Y.

Solution Thiamine Hydrochloride: 10 mg. per cc. in 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

Tablets Thiamine Hydrochloride: 1 mg., 5 mg. and 10 mg.

THONZYLAMINE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, p. 24).

The following dosage form has been accepted:

Wyeth, Incorporated, Philadelphia 3

Cream Neohetramine Hydrochloride 2%: 28.3 Gm. collapsible tubes.

U. S. patent 2,465,865 (Licensed by Nepera Chemical Co., Inc.); U. S. trademark 501,673 (Registered by Nepera Chemical Co., Inc.).

PENICILLIN FOR TOPICAL APPLICATION (See New and Nonofficial Remedies 1949, p. 158).

The following dosage form has been accepted:

E. R. Squibb & Sons, New York 22

Chewing Troches Potassium Penicillin G: 20,000 units.

Council on Foods and Nutrition

ACCEPTED FOODS

The following product has been accepted as conforming to rules of the Council. James R. Wilson, M.D., *Secretary.*

Special Milk Products, Inc., Los Angeles.

Hi-Pro consists of a mixture of milk solids, whole and nonfat, standardized with milk proteins to give a final product containing approximately 14 per cent butterfat and 41 per cent milk protein.

Analysis (submitted by manufacturer).—Protein 41 per cent, fat 14 per cent, lactose 35 percent, minerals 6.5 per cent and moisture 3.0 per cent.

Calories.—4.3 per gram; 122 per ounce.

Vitamin Content	*Per Hundred Grams*
Vitamin A	425 I.U.
Thiamine	0.23 mg.
Riboflavin	1.26 mg.
Nicotinic acid	0.7 mg.

Use.—Designed for use in infant feeding where a high protein, low fat food is indicated.

Swift and Company, Chicago.

Swift's Brookfield Powdered Whole Milk, Vitamin D Fortified, a powdered whole milk with vitamin D added in the form of irradiated ergosterol dispersible concentrate in amounts sufficient to produce a minimum of 400 U. S. P. units of vitamin D per 4 ounces (113.4 Gm.) of whole milk powder.

Analysis (submitted by manufacturer).—Butterfat 28.00 per cent; protein 26.20 per cent; lactose 38.00 per cent; minerals 5.80 per cent, and moisture 2.00 per cent.

Calories.—5.13 per gram; 145.71 per ounce.

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SATURDAY, NOVEMBER 12, 1949

AGING AND CHRONIC ILLNESS

A study of aging and chronically ill patients in the Birmingham Hospital region in England has been reported in two Lumleian Lectures by Dr. A. P. Thomson.[1] This study reveals with discerning clarity some of the problems associated with the care of persons who become less active because of advancing age, chronic illness and even social dependence. It presents a perplexing problem, for which, however, there is hope of solution through better understanding and more effective utilization of medical services, particularly those that can be supplied by general practitioners.

Dr. Thomson was impressed particularly during his study with the profound apathy of many of the patients. They seldom spoke, they rarely moved and they seemed to lack interest in all normal activities. It was not difficult to obtain information from them, but they did not reveal any emotion when they were recalling their past lives regardless of the excitement or adventure in these lives. Apparently food was their main interest. Men and women appeared to be alike in their apathy, although the women were cleaner and more responsive. The most active movement occurred when there was an emotional outbreak and when attempted pilfering was discovered. In the wards where the patients were more active some gambled almost feverishly and others who had certain privileges found ingenious methods for obtaining money for alcoholic sprees. Eventually even the more active developed habits which caused the observer to wonder whether "the process of decay is inevitable, or whether it is caused or accelerated by the apathy surrounding the chronic beds."

The survey was undertaken to determine whether patients could be returned to their homes if improvements in personnel and equipment and the institution of standards comparable to those in good general hospitals were adopted. Dr. Thomson concluded that the majority would not benefit sufficiently to permit return to their own homes. He offers three reasons for his conclusion: "First, nearly all the patients are the victims of pathological conditions which are either degenerative or genetic in their origin and beyond the scope of therapeutics in its present stage of development. Secondly, long confinement to bed without occupation or diversional therapy, without massage and passive movement in hospitals so grossly understaffed that independent activity of any kind has been discouraged for fear of accident, has led to rapid deterioration in the shape of contractures, deformities of the feet, and the development of incontinence. Thirdly, and probably the most important, is the subtle disintegration of human personality that is so common in these patients. Many literally do not wish to leave the beds in which they have lain so long . . . they did not wish anything to happen; they wished to be left to perish quietly." Thus, he believes that "most of the inmates in the chronic wards must be regarded as a sad inheritance from a long period of neglect—like many of the deteriorated patients in the mental hospitals—and that the opportunity for effective treatment has long since been lost."

One third of all patients were unwilling to leave the infirmary. The longer they remained the more unwilling they were to leave. In part the reluctance was due to the disintegration of their homes. Other factors that may have exerted some influence were freedom from want, fear of unemployment, lack of companionship and fear of tyranny. Inherent instincts of survival must have been sufficient for many of the inmates.

The care of those who are chronically ill has posed for many years problems for the medical profession and other interested groups. It has been and is being studied in the community, at the state level and at the national level. More recently even representatives of countries spread throughout the world have met to discuss aging and chronic illness. The interest of the American Medical Association in this problem long has been evident in its various activities. The need for caring for and rehabilitating aged persons and those with chronic disease is emphasized in the twelve point program of the American Medical Association for the advancement of medicine and public health. A Commission on Chronic Illness[2] has been formed as a result of joint efforts by the American Medical Association, the American Hospital Association, the American Public Health Association and the American Public Welfare Association. Office space has been provided at the headquarters of the American Medical Association for the commission which represents the voluntary health agencies, government agencies and the public.[3]

Modern medical advances have resulted in the saving of innumerable lives, have lessened periods of convalescence and have aided immeasurably many who might otherwise have been confined to the limitations of invalidism. At the same time, however, the life span of populations has been increasing steadily. There are many and varied problems associated with aging and chronic illness. Solutions to these problems rest to a large extent with those who donate time, experience, equipment and money. Enthusiasm and active participation must be created at the local community level, as it is here where the personal touch is possible.

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[1] Thomson, A. P.: Problems of Ageing and Chronic Sickness, Brit. M. J. **2:** 243 (July 30) 1949; ibid. **2:** 300 (Aug. 6) 1949.

[2] Aid for Chronic Illness, editorial, J. A. M. A. **139:** 649 (March 5) 1949.

[3] Commission on Chronic Illness, organization section, J. A. M. A. **140:** 631 (June 18) 1949.

ANGIOCARDIOGRAPHY

Important contributions to angiocardiography have been made by Forssman; Moniz, Carvalho and Lima; Conte and Costa; Castellanos, Pereiras and Garcia, and Robb and Steinberg. Robb and Steinberg[1] in 1938 reported a practical method of visualizing the chambers of the heart, the pulmonary circulation and the great blood vessels. The method consists of causing opacity of the chambers of the heart and the blood vessels within the thorax and of making a roentgenographic examination of these structures at the moment the opacity occurs. Dotter and Steinberg[2] in 1949 reported on 1,000 patients subjected to angiocardiography without a fatality. The usual reaction of a patient, according to these authors, consists of a feeling of mild heat starting in the chest and neck and spreading throughout the body, followed thirty to forty-five seconds after the injection by a throbbing frontal headache, which is apparently associated with a mild elevation of blood pressure and which subsides spontaneously in five to ten minutes. Weakness, flushing, pallor and thirst were often noted. Except for chemical thrombosis of the injected vein in 30 to 40 per cent of the patients, late reactions were not observed. The method of contrast cardiovascular visualization was found to be of value in the diagnosis of coarctation of the aorta; tetralogy of Fallot and related lesions; isolated pulmonary artery stenosis; anomalous pulmonary veins; aneurysms, congenital and acquired; pericardial effusion; uncomplicated syphilitic aortitis; mediastinal tumors, and bronchogenic carcinoma. The method also has been important in the development of better understanding of other abnormal conditions, such as patent ductus arteriosus; septal defects; hypertensive, arteriosclerotic, rheumatic and pulmonary heart disease; constrictive pericarditis, and chronic pulmonary disease. Angiocardiography permits adequate demonstration of the anatomic features of the aorta and is valuable in the preoperative study of diseases of this blood vessel. Patent ductus arteriosus can be diagnosed by physical examination and confirmed by cardiac catheterization. Angiocardiography in this condition demonstrates elevation and enlargement of the left branch of the pulmonary artery and often reveals a dilatation of the aorta at the site of the origin of the duct. In tetralogy of Fallot the method reveals a simultaneous opacity of the aorta and the pulmonary artery, simultaneous opacity of a large right and a small left ventricle, an area of stenosis in the pulmonary conus or artery and usually a small, poorly filled pulmonary arterial tree.

The development of surgical methods of treatment of congenital heart disease stresses the desirability of more accurate methods of diagnosis. Combined angiocardiography and cardiac catheterization have contributed much toward a more accurate diagnosis of many congenital cardiac anomalies. Dotter and Steinberg[2] stress that many modifications of the method have been devised recently and employed to obtain serial records of the cardiovascular structures. Cineroentgenography, multiple cassette changers and automatic photoroentgen methods have been employed with considerable success. The ideal device, according to these authors, would be one which would permit angiocardiographic recording of serial, direct, high quality teleroentgenograms of the chest made at rapid intervals with short electrocardiographically controlled exposures. Simultaneous teleroentgenograms in two projections would give a two dimensional study with a single injection and permit volumetric determinations of heart chambers and vessels.

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[1] Robb, G. P., and Steinberg, I.: A Practical Method of Visualization of the Heart, the Pulmonary Circulation and the Great Blood Vessels in Man, J. Clin. Investigation **17**: 507, 1938.

[2] Dotter, C. T., and Steinberg, I.: Clinical Angiocardiography: A Critical Analysis of the Indications and Findings, Ann. Int. Med. **30**: 1104 (June) 1949.

Current Comment

INSULIN AND TISSUE PROTEIN

The metabolism of protein is influenced by the metabolism of carbohydrate. After the discovery of insulin, Janney[1] conducted experiments from which he could show insulin causes a decrease in the urinary nitrogen. He suggested, "It seems possible that carbohydrate metabolites are synthesized into the protein molecule by the aid of insulin." At the same time, Weichmann[2] demonstrated in normal and diabetic subjects that insulin effects a decrease in the amino acid nitrogen of venous blood. The depressing effect of insulin on the amino acid level of the blood was confirmed in man and in the rat, rabbit and dog.[3] Because of the role of the liver in protein metabolism, this organ might be assumed to be implicated in the foregoing phenomenon. However, using eviscerated animals, Mirsky[4] showed that the amino acid level of the blood remains normal for long periods following the injection of glycine and that the subsequent administration of insulin causes a decided drop in the blood amino acid concentration. The elevated level of amino nitrogen following functional hepatectomy in the rat was retarded by the injection of insulin in other experiments.[5] Thus the liver would not appear to play a primary part in the withdrawal of amino acids from the blood under the influence of insulin. The observation of Lotspeich[6] indicates that the synthesis of muscle protein from the amino acids of the blood occurs after insulin administration. He compared the pattern of concentration of the ten essential amino acids withdrawn from the blood after insulin is administered with the pattern of concentration following hydrolysis of the protein in a biopsy sample of muscle tissue from the same animal, and found an impressive similarity between the relative concentrations of amino acids from the two sources. This suggests that one action of insulin is the promotion of synthesis of muscle protein from amino acids in the blood. Such observations reveal the many functions of insulin and serve to stimulate interest in and respect for its potential physiologic activity.

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[1] Janney, N. W., and Shapiro, I.: Rôle of Insulin in Protein Metabolism, Arch. Int. Med. **38**: 96 (July) 1926.

[2] Weichmann, E.: Deutsch. Arch. f. klin. Med. **150**: 186, 1926.

[3] Kerr, S. E., and Krikorian, V. H.: J. Biol. Chem. **81**: 421, 1926. Luck, J. M.; Morrison, G., and Wilbur, L. F.: Ibid. **77**: 151, 1928. Harris, M. M., and Harris, R. S.: Proc. Soc. Exper. Biol. & Med. **64**: **471**, 1947.

[4] Mirsky, I. A.: Am. J. Physiol. **124**: 569, 1928.

REMISSIONS IN ARTHRITIS

Remissions in arthritis may occur after the use of a variety of therapeutic agents, such as gold therapy, hyperthermia with typhoid vaccine, massive doses of activated ergosterol, bismuth therapy, administration of cinchophen or foreign protein and bee venom therapy. Hench[1] reemphasized what had been noted by several earlier observers, notably by Still and by Wishart, that hepatic damage with, and occasionally without, jaundice is decidedly beneficial to patients with arthritis. He stated that the future outlook for patients with chronic arthritis is decidedly hopeful and that within the body of patients who have even the severest arthritis powerful corrective forces lie dormant which merely await the proper stimulation. Archer,[2] in a more recent publication, advances the hypothesis that a potent denominator for remissions in cases of arthritis is present when the patients become pregnant or jaundice develops and that the denominator is hepatic damage and/or a dysfunction. The same hypothesis, in his opinion, would explain the remissions observed in patients with arthritis after the use of gold salts, cinchophen, bismuth compounds, fever therapy, viosterol in massive doses and other hepatotoxic drugs. He mentions six biochemical factors present in pregnancy which operate also in hepatocellular and extrahepatic obstructive jaundice. These biochemical changes, for the most part, are the result of hepatic damage and dysfunction, and the common biochemical denominators, singly or in combination, may possess antirheumatic properties. Archer describes a method of approach which consists of the simultaneous administration of gold salts and large doses of viosterol to produce a mild toxic hepatitis, the administration of these agents being carefully controlled by serial tests of hepatic and renal function. Hench, Kendall, Slocumb and Polley[3] reasoned that the antirheumatic substance X might be an adrenal hormone. The result of this reasoning is the discovery of the adrenal cortex hormone called compound E and of the adrenocorticotropic hormone commented on in a recent editorial[4] in THE JOURNAL.

TYROTHRICIN AND ANOSMIA

Nasal medication with vasoconstrictors and antibacterial agents has a useful although limited application, but many have assumed mistakenly that most of the wide variety of nasal preparations offered for sale are essentially harmless and can be used freely for nasal discomforts. That many such preparations are far from innocuous has been shown by the severe reactions reported to follow instillation of the sodium salts of various sulfonamide drugs and the more recent reports of severe local effects from the prolonged use of vasoconstrictors. Seydell and McKnight[1] reported that the use of tyrothricin preparations intranasally has caused olfactory disturbances in at least 7 patients, consisting of complete anosmia or a continuous sense of "smelling bad odors." Although this disability is temporary in some patients, it has lasted for more than a year in others. The amounts of tyrothricin used and the duration of medication required to produce these untoward effects were not excessive. This report again emphasizes the necessity for thorough toxicologic study of preparations for intranasal use, particularly the local effects on mucous membranes, blood vessels and nervous tissue. It also emphasizes the necessity for cautioning patients against promiscuous use of nose drops.

THIRD GENERAL ASSEMBLY OF WORLD MEDICAL ASSOCIATION

Elsewhere in this issue appears a brief account of the proceedings of the Third General Assembly of The World Medical Association. One of the outstanding accomplishments was the adoption of an International Code of Ethics. This code, which had been submitted previously to all member associations, was adopted unanimously with only minor amendments. Ten national medical associations had previously approved the code. Among these is the American Medical Association. The World Health Organization is reported to be also considering the preparation of an international code. This is not a proper function of the organization; it is a governmental body and should not attempt to draft a code of ethics for professional bodies. The World Medical Association, being composed of national medical associations and representing the practicing physicians, is in a much better position to draft any acceptable code for physicians. Acceptance of the World Medical Association Code by ten national medical associations indicates that the association can speak for its member physicians with authority.

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[5] Frame, E. G., and Russel, J. A.: Endocrinology **39**: 420, 1946.

[6] Lotspeich, W. D.: J. Biol. Chem. **179**: 175, 1949.

[1] Hench, P. S.: The Advantages of Hepatic Injury and Jaundice in Certain Conditions, Notably the Rheumatic Diseases, M. Clin. North America **24**: 1209 (July) 1940.

[2] Archer, B. H.: Clinical and Biochemical Study of Remissions in Nonspecific Arthritis: Report of a Case, Arch. Int. Med. **84**: 361 (Sept.) 1949.

[3] Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: The Effect of a Hormone of the Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis, Proc. Staff Meet., Mayo Clin. **24**: 181 (April 13) 1949.

[4] Adrenal Cortical Hormone for Arthritis, editorial, J. A. M. A. **139**: 1274 (April 30) 1949.

[1] Seydell, E. M., and McKnight, W. P.: Disturbances of Olfaction Resulting from Intranasal Use of Tyrothricin, Arch. Otol. **47**: 465 (April) 1948.

ORGANIZATION SECTION

Official Notes

THE SCIENTIFIC EXHIBIT, SAN FRANCISCO SESSION

Each Section of the Scientific Assembly has elected a representative to the Scientific Exhibit for the San Francisco Session, June 26-30, 1950.

Section on Internal Medicine, Dr. Wesley W. Spink, University Hospital, Minneapolis 14.

Section on Surgery, General and Abdominal, Dr. Walter G. Maddock, 250 East Superior Street, Chicago.

Section on Obstetrics and Gynecology, Dr. Frederick H. Falls, 1853 West Polk Street, Chicago 12.

Section on Ophthalmology, Exhibit Committee, Dr. Georgiana D. Theobald, 715 Lake Street, Oak Park, Ill.; Dr. Donald J. Lyle, 601 Union Trust Building, Cincinnati 2, and Dr. Phillips Thygeson, San Jose, Calif.

Section on Laryngology, Otology and Rhinology, Dr. James B. Costen, 722 Beaumont Medical Building, St. Louis.

Section on Pediatrics, Dr. Albert V. Stoesser, 412 Delaware Street, S.E., Minneapolis.

Section on Experimental Medicine and Therapeutics, Dr. Robert W. Wilkins, Evans Memorial Hospital, 65 East Newton Street, Boston.

Section on Pathology and Physiology, Dr. J. J. Moore, 55 East Washington Street, Chicago.

Section on Nervous and Mental Diseases, Dr. A. B. Baker, University of Minnesota Medical School, Minneapolis.

Section on Dermatology and Syphilology, Dr. Francis W. Lynch, 350 St. Peter Street, St. Paul.

Section on Preventive and Industrial Medicine and Public Health, Dr. Paul A. Davis, 1436 Delia Avenue, Akron 2, Ohio.

Section on Urology, Dr. John H. Morrissey, 40 East Sixty-First Street, New York; Dr. Roger W. Barnes, 1216 Wilshire Boulevard, Los Angeles, and Dr. W. W. Scott, Brady Urological Institute, The Johns Hopkins Hospital, Baltimore 5.

Section on Orthopedic Surgery, Dr. Robert J. Joplin, 1180 Beacon Street, Boston 46.

Section on Gastro-Enterology and Proctology, Dr. J. P. Nesselrod, 636 Church Street, Evanston, Ill., and Dr. Everett D. Kieffer, The Lahey Clinic, 605 Commonwealth Avenue, Boston.

Section on Radiology, Dr. S. W. Donaldson, 326 North Ingalls Street, Ann Arbor, Mich.

Section on Anesthesiology, Dr. Scott M. Smith, 325 Eighth Avenue, Salt Lake City.

Section on General Practice, Dr. Richard Mills, 918 East Los Olas Boulevard, Fort Lauderdale, Fla.

Section on Diseases of the Chest, Dr. Edwin R. Levine, Michael Reese Hospital, Twenty-Ninth Street and South Ellis Avenue, Chicago.

Section on Physical Medicine and Rehabilitation, Dr. Walter J. Zeiter, Euclid Avenue at Ninety-Third Street, Cleveland.

Application blanks for space in the Scientific Exhibit are now available and may be obtained from the Section representatives or the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10.

THE WORLD MEDICAL ASSOCIATION

The Third General Assembly of the World Medical Association was held at the British Medical Association House in Tavistock Square, London, Oct. 10-15, 1949. Delegates from 28 countries were present. Observers from UNESCO, the World Health Organization, the International Labor Office, nine international medical bodies and the United States Committee were also in attendance.

Dr. Charles Hill of Great Britain was installed as president. Dr. Hill, in the name of the association, then presented a gavel to Prof. Marquis for his services as president for two years. The gavel was of rosewood. On the center of the head was a silver band, suitably inscribed.

The Asociación Médica Nacional of Panama and the Colegio Médico de El Salvador were elected to membership. This makes a total of 42 nations which are now represented in the World Medical Association.

Two minor amendments to the by-laws were adopted. These pertained to proxy voting and to the qualifications of delegates.

The reports of the treasurer and of the United States Committee were received and approved. The assembly then adopted the following resolution:

"*Resolved:* That the thanks of the General Assembly be accorded to the United States Committee, the American Medical Association and our medical colleagues in the United States who have contributed so generously to the World Medical Association."

The annual report of the Council to the General Assembly was received and approved. This included the recommendation that three studies be undertaken; namely, pharmaceutical practices, hospitals and a supplement to the status of the medical profession.

The General Assembly adopted a design for the emblem of the World Medical Association. This emblem consists of a globe, blue on white, on which is superimposed the ancient insignia of medicine. Around the periphery of the globe is the name of the association in Latin, "Societas Mundi Medica," and the date of foundation, in Roman numerals, A.D. MCMXLVII (1947).

Reports were received from the assistant secretaries for Asia, Europe and Latin America relative to developments and conditions within their respective areas.

The General Assembly adopted an International Code of Ethics with the provision that it be left to national medical associations to modify the wording for use within their respective countries, provided that it conform to the principles of the code. This code is as follows:

"A doctor must always maintain the highest standards of professional conduct.

"A doctor must not allow himself to be influenced merely by motives of profit. The following practices are deemed unethical:

"1. Any self advertisement except such as is expressly authorized by the national code of medical ethics.

"2. Taking part in any plan of medical care in which the doctor does not have professional independence.

"3. To receive any money in connection with services rendered to a patient other than the acceptance of a proper professional fee, or to pay any money in the same circumstances without the knowledge of the patient.

"Under no circumstances is a doctor permitted to do anything that would weaken the physical or mental resistance of a human being except from strictly therapeutic or prophylactic indications imposed in the interest of the patient.

"A doctor is advised to use great caution in publishing discoveries. The same applies to methods of treatment whose value is not recognized by the profession.

"When a doctor is called upon to give evidence or a certificate, he should only state that which he can verify.

"The doctor must always bear in mind the importance of preserving human life from the time of conception until death.

"A doctor owes to his patient complete loyalty and all the resources of his science. Whenever an examination or treatment is beyond his capacity he should summon another doctor who has the necessary ability.

"A doctor owes to his patient absolute secrecy on all which has been confided to him or which he knows because of the confidence entrusted to him.

"A doctor must give the necessary treatment in emergency, unless he is assured that it can and will be given by others.

"A doctor ought to behave to his colleagues as he would have them behave to him.

"A doctor must not entice patients from his colleagues.

"A doctor must observe the principles of 'The Declaration of Geneva' approved by the World Medical Association."

Reports were received from the editor of the *World Medical Association* Bulletin and the Committee on Ways and Means of Securing Publicity for the World Medical Association.

The Committee on Postgraduate Medical Education presented the report of a study on the current trend in postgraduate medical education and specialist training in thirty-two member countries. This study reports such information as the existence and establishment of standards for specialists, period and type of training, prerequisites, examinations, certificates, schools, faculties, recognized specialties and opportunities for advanced education for physicians not interested in becoming specialists. After consideration of this report certain recommendations were adopted by the General Assembly, including recommendation for continuing study.

Reports were received from the liaison officers of the following organizations: World Health Organization, International Labor Office, International Red Cross and UNESCO. Dr. M. H. Hafezi, observer from the World Health Organization, greeted the General Assembly in the name of his organization and expressed the hope that closer cooperation between the World Health Organization and the World Medical Association would develop.

Dr. Manuel de Viado, speaking for the International Labor Office, expressed the desire of his organization for cooperation and an exchange of information and views. Dr. de Viado stated that the International Labor Office was in favor of protection of freedom of choice of doctors and of doctors being represented on boards which consider medical aspects of social security. He further stated that he was sure both organizations had the same aims but might differ in the method of attaining them.

Greetings from the director general of UNESCO were conveyed by Dr. I. M. Zhukova. Dr. Zhukova urged the desirability of closer cooperation between the two bodies and suggested that the Secretary General should contact UNESCO with a view to exploring the possibilities of joint action.

The Committee on Social Security presented a factual report of a study of national schemes of social security in twenty-four member countries. In the course of debate, the facts relative to social security plans in France, Belgium, Canada, Sweden, Australia, South Africa, Switzerland, India and the United States of America were presented. (Details of this discussion will be published by the World Medical Association). The General Assembly adopted certain recommendations relative to the continued activity of the Committee on Social Security.

The General Assembly confirmed the selection of the United States of America as the venue of the 1950 session. Dr. Elmer Lee Henderson of Louisville, Ky., was unanimously elected president-elect for the year 1949-1950, and Dr. R. L. Sensenich of South Bend, Ind., recent past President of the American Medical Association, was elected a member of the Council of the World Medical Association to succeed Dr. Henderson. Dr. Paul Cibrie (France), Dr. Dag Knutson (Sweden) and Dr. J. A. Pridham (Great Britain) were reelected members of Council for the ensuing three years.

Canada, Cuba and Greece presented invitations to hold the 1952 General Assembly in their countries. The selection of the venue was referred to the Council for decision.

HEALTH EDUCATION AWARD

The National Education Association and the American Medical Association have received the award of the American Academy of Physical Education for the outstanding school health publication of the past year. The academy, an organization of leaders in the field of physical education, made the award for the work of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association for its revision of the book "Health Education."

More than 100 specialists in the field of school health, including physicians and educators, contributed to the revised edition, the fourth of a report first published in 1924 as a guide for teachers and educators and dedicated to the school children and youth of America. Editor of the revision was Dr. Charles C. Wilson, professor of education and public health, Yale University, New Haven, Conn.

The Joint Committee is composed of five physicians named by the American Medical Association and five educators selected by the National Education Association. In existence since 1911, its chief function is the publication of material to improve school health education and the promotion of acceptable standards of school health services. Dr. George M. Lyon, Washington, D. C., is chairman of the committee. Mabel E. Rugen, Ph.D., professor of public health at the University of Michigan, Ann Arbor, is vice chairman, and Fred V. Hein, Ph.D., Bureau of Health Education, American Medical Association, is secretary.

FRATERNITY AND ALUMNI REGISTRATION AT SAN FRANCISCO SESSION

Applications for registration space for fraternity and alumni organizations at the San Francisco session of the American Medical Association, June 26 to 30, 1950, should be submitted to Dr. Walton Van Winkle Jr., American Medical Association, 535 North Dearborn Street, Chicago 10, before Jan. 15, 1950. Application forms will be sent on request.

Notice of luncheons, dinners or other functions must be received before April 1, 1950 in order to be announced in the official program of the session and in the Convention Issue of The Journal. Forms for submission of such notices are included with the forms for application for registration space.

Washington Letter

(From Our Regular Correspondent)

Nov. 7, 1949.

Health Legislation of First Session Summarized

One major national health bill passed by Congress and signed by the President and four others passed by the Senate only—these were the highlights of the first session of the 81st Congress, which ended on October 19. When the second session convenes in January, consideration of scores of pending bills will be resumed.

Amendment of the Hill-Burton hospital construction act was the sole item of nationally applicable legislation to go through both houses and be approved by the White House. It doubles the federal contribution to $150,000,000 annually, extends the subsidy program to June 30, 1955 and authorizes $1,200,000 in grants annually to medical schools, hospitals and other institutions to conduct research designed to improve efficient utilization of hospital facilities.

Passed by the Senate only and awaiting House action in 1950 are bills expanding federal support of local public health units, introducing a new system of government aid to medical schools and to students eligible for financial assistance, increasing federal aid to medical research and inaugurating a national plan of subsidizing school health services. In the same category is the National Science Foundation bill, which makes special provision for coordination and stimulation of fundamental research in the biologic and medical sciences.

A bill passed by Congress but vetoed by the President on October 31 would have furnished automobiles without cost to certain veterans, depending on the character of their physical disability, of World Wars I and II.

Other measures of a specialized nature which were approved by the President following enactment by Congress included the following:

Authorization of $75,000 annually to defray expenses incidental to promotion of National Employ the Physically Handicapped Week.

Inclusion of aureomycin, bacitracin and chloramphenicol (chloromycetin®) among the drugs which must be certified by the Food and Drug Administration before they are placed on the market.

Granting of an additional $1,500,000 for services to crippled children.

Amendment of tariff laws so as to exempt from duty payments those artificial limbs and braces which are imported not for resale but for personal use.

Amendment of military statutes for the purpose of abolishing promotion inequities affecting members of the Army Medical Service Corps and, in the case of the Navy, to authorize retention on active duty—beyond the normal retirement date—of captains in the Medical Corps and Dental Corps whose continued services are considered essential.

Authorization of a $1,500,000 contribution to help construct a county hospital at Albuquerque, N. Mex., on condition that at least 100 beds are set aside for care of Indian wards of the government. The hospital is to be erected on land transferred to Bernalillo County by the federal government.

Authorization of $375,000 from the treasury to build a small hospital at St. Lawrence, Newfoundland, in appreciation of aid given by townsmen to survivors of the Navy warships *Truxton* and *Pollux*, which were wrecked in 1942.

Increased salary scales for physicians, dentists and nurses in the Department of Medicine and Surgery, Veterans Administration.

Extension to a greater number of disabled war veterans of special benefits enabling them to receive up to $10,000 for construction of housing especially adapted to occupants who must use wheel chairs, limb braces or crutches.

Comparatively minor measures which passed the Senate in 1949 and which are awaiting House action in 1950 include:

Administrative strengthening of the dental departments of Army and Air Force.

Holding of a national survey of chronic illness by the United States Public Health Service.

Authorization of the Veterans Administration to detail professional personnel in the Department of Medicine and Surgery to hospitals, medical schools and other institutions giving postgraduate instruction for longer periods of time than is permitted at present.

Liberalization of procedures for admittance of patients to federal hospitals at Fort Worth, Texas, and Lexington, Ky. (narcotics addiction) and St. Elizabeths Hospital (mental) in Washington, D. C.

Exemption of Sister Elizabeth Kenny from complying with certain immigration law requirements.

Directing the United States Public Health Service to widen its research into family aspects of chronic illness, a long range project now confined to the population of Washington County and Hagerstown, Md.

Prescribing means for disposing of federal rapid treatment centers which have been administered by the veneral disease division of the United States Public Health Service.

Senator Humphrey's Position on Health Program Clarified

Advocates of compulsory health insurance were disturbed by press reports late in October that Senator Hubert H. Humphrey (Democrat, Minnesota) was deserting their cause. The newspaper accounts were based on an interview of the Senator in Minneapolis shortly after adjournment of Congress.

In Washington on October 27, Senator Humphrey stated that his position had been misinterpreted. He emphasized that he is still a supporter of the Administration national health program, as set forth in the Thomas-Murray-Humphrey-Dingell bill (S. 1679). Four of the bill's seven titles have been passed by the Senate, he observed: Aid to medical education, hospital expansion, subsidization of local public health units and expansion of federal medical research. As for the controversial seventh title—compulsory health insurance—Senator Humphrey stated that he feels further public hearings should be held on this question in order to achieve a blueprint of operation that would be more sound, administratively, than is provided for by the language of S. 1679.

Aniseikonia Patents Dedicated to Public

The United States Patent Office has announced that 25 patents relating to detection, measurement and correction of aniseikonia have been dedicated to the general public by Hanover Institute, Hanover, N. H. The institute, a privately endowed group formerly known as the Dartmouth Eye Institute, was described by the Patent Office as pioneers in aniseikonia research and in development of technics for its correction. The methods and apparatus covered by the 25 patents are now available for commercial and professional utilization. They are said to represent thirty years of clinical experimentation at the Hanover clinic. The patents include such heretofore unpublished data as details of apparatus construction, specific methods of testing for aniseikonia and psychophysiologic background material. Copies of the patents are obtainable from the U. S. Patent Office, Washington 25, D. C., at 25 cents each.

Ewing Avoids Involvement in Humphrey Incident

Addressing the CIO convention in Cleveland November 1, Federal Security Administrator Ewing insisted that the Truman Administration is as strong as ever for compulsory health insurance but carefully avoided any direct reference to the recent statement by Senator Hubert H. Humphrey (Democrat, Minnesota) expressing his dissatisfaction with the insurance provisions in the Thomas-Murray-Dingell bill. Humphrey, who is one of the bill's Senate sponsors and heretofore an ardent supporter of federalized medical care, made it clear that he believes that more consideration should be given to the proposed system's complexities before Congress adopts such a plan. His statement of this position elicited bitter denunciation of the Minnesotan by the labor press.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

American Academy of Pediatrics, San Francisco, Nov. 14-17. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Defillo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Cincinnati, Nov. 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

MEETING OF EDUCATION COMMITTEE

The Professional Education Committee and representatives of the Education Committees of Army teaching hospitals met in the Surgeon General's office October 25-28 under the chairmanship of Col. Floyd L. Wergeland. The purposes of the meeting were to select qualified officers for resident and senior resident level who will enter the Military Resident Program January 1, to present space allotments in each specialty and each hospital and to select qualified officers for all levels of training who will enter the program July 1, 1950.

Representatives of the Army's teaching hospitals were: Brig. Gen. Edwin H. Roberts (MC), commanding general, Fitzsimond General Hospital, Denver; Brig. Gen. Leonard D. Heaton (MC), director of Professional Services, Letterman General Hospital, San Francisco; Col. Rawley E. Chambers (MC), chief, Neuropsychiatry Branch, Brooke Army Medical Center, Fort Sam Houston, Texas; Col. Charles L. Leedham (MC), chief, Medical Services, Oliver General Hospital, Augusta, Ga.; Col. Walter Moursund (MC), director of Professional Training, Army Medical Center, Washington, D. C.; Major Frank K. Lawford (MSC), secretary, Education Committee, Gorgas Hospital, Panama Canal Zone, and Major John K. Wallace (MC), secretary, Education Committee, Valley Forge General Hospital, Phoenixville, Pa.

MEETING OF BALTIMORE RESERVE OFFICERS

Medical Department reserve officers from the Baltimore area held a meeting at Johns Hopkins University, October 26, arranged by Dr. Perrin H. Long, professor of internal medicine at Johns Hopkins and a member of the executive council of the Society of Medical Consultants of World War II. The speakers were: Col. Robert L. Black, assistant chief, Personnel Division, who discussed general plans and policies of the Medical Department Reserve Program; Lieut. Col. C. H. Walsh, of the Medical Plans and Operations Division, who described the revised organization procedures, which state that professional personnel assigned to a unit will not join the unit until their professional skills are actually required; Major A. J. Colyer of the Personnel Division, who discussed the career guidance policy for Medical Department officers, and Major John A. Mikuluk of the Personnel Division, who discussed mobilization assignments and retirement credit points for reserve officers.

PUBLIC HEALTH SERVICE

MORE FEDERAL FUNDS FOR HOSPITALS AND RESEARCH

Amendments to the Hospital Survey and Construction Act, which became effective when signed by the President on October 25, increased the authorized amount of federal grants to the states from $75,000,000 to $150,000,000 each year. The period during which allotments can be made is extended from June 30, 1950 to June 30, 1955. A new formula provided by the amendments permits a federal contribution as high as 66.6 per cent of the total construction costs for new hospitals as compared with the 33.3 per cent ceiling under the original law.

The amendments also authorize federal grants totaling $1,200,000 a year for a five year period for research programs to improve and coordinate hospital services. Surgeon General Scheele pointed out that one aspect of planning under the research program will be to find ways of providing better linkage between large urban hospital centers and hospitals in smaller areas. "It is our hope, he said, to work out a means by which specialized types of service now found only in larger hospitals will be available to smaller units. Smaller hospitals too frequently are forced to operate as isolated units . . . they cannot afford large outlays for the high-priced equipment which is maintained in larger medical centers."

Pioneer projects in interhospital relationships are already being conducted at the Medical College of Virginia, the New England Medical Center, the Council of Rochester Regional Hospitals and the Medical School of the University of Michigan. It is anticipated that these projects will continue to serve as useful sources for data on professional and administrative problems in connection with the various phases of hospital service.

Dr. Scheele also pointed out that the Public Health Service, under the amendments, is authorized to make grants for additional studies to the states, medical schools, regional hospital councils and similar nonprofit institutions. The studies may include projects for establishing rotating internships, refresher courses for physicians, clinical conferences and provisions for the common use of diagnostic facilities and equipment, all of which will be of aid to smaller hospitals.

Under the national hospital construction program, 954 hospital projects had been approved by Oct. 1, 1949. About 400 were under construction, and 50 had been completed and are now open. The majority of these projects are small general hospitals of 50 beds or less and are in small towns or rural areas.

REGULAR CORPS EXAMINATION FOR MEDICAL OFFICERS

A competitive examination for appointment of medical officers in the Regular Corps of the U. S. Public Health Service will be held, Jan. 9-11, 1950 at a number of points throughout the United States. Application must be received no later than Dec. 12, 1949. The Regular Corps is a commissioned officer corps composed of members of various medical and scientific professions, appointed in appropriate professional categories such as medicine, dentistry, nursing, engineering and pharmacy. All commissioned officers are appointed to the general service and are subject to change of station. Appointments will be made in the grades of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Appointments are permanent and provide opportunities to qualified physicians for a lifetime career in clinical medicine, research and public health. Additional information may be obtained by writing to the Surgeon General, Public Health Service, Washington 25, D. C. Attention: Division of Commissioned Officers.

PHYSIOLOGISTS WANTED

A competitive examination will be held Feb. 6-8, 1950 for the appointment of physiologists in the Regular Commissioned Corps of the Public Health Service. Examinations will be held at a number of points throughout the United States. Appointments from the examination will be in the grades of assistant and senior assistant scientist, equivalent to the Army ranks of first lieutenant and captain, respectively. Additional information and application forms may be obtained by writing to the Public Health Service, Washington 25, D. C., Attention: Division of Commissioned Officers. Applications must be on file in Washington by Jan. 2, 1950.

PERSONAL

Dr. Tulio Velasquez of the San Marcos University Medical School, Lima, Peru, is at the National Institutes of Health, Bethesda, Md., under a fellowship awarded by the Rockefeller Foundation to survey the technics used in studies on environmental adaptation. Dr. Velasquez is making a survey for the Institution of Andean Biology, with respect to myoglobin and the adaptation of animals to high altitude.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CONNECTICUT

Appoint Director of Medical Service.—Dr. William H. Horton, medical director for the Connecticut State Public Welfare Department, has been appointed full time medical director for Connecticut Medical Service, succeeding Dr. Creighton Barker, New Haven, the society's executive secretary, who has been acting medical director since it started operation last February. Rapid growth of the service has increased the administrative duties so that a full time medical director is required. As of September 1 the plan in seven months of operation has insured 154,000 persons, representing 72,000 subscriber contracts and about 1,400 business and industrial concerns. Dr. Horton is a native of Fall River and is a graduate of Boston University School of Medicine.

ILLINOIS

Ten Year Decline in Typhoid.—While modern sanitary practice has all but eliminated typhoid from the major communicable disease problems, the residuum is still too high to permit a complacent attitude. This residuum, the State Department of Health says, is almost entirely due to typhoid carriers, former victims of typhoid. The harm which an unknown carrier can produce warrants the application of every effort in his recognition. "The seemingly unpleasant task of collecting stool specimens from every conceivable contact, and the repetition of such collections until a source is found, is a small price to pay in ridding communities of the hazard of the unknown typhoid carrier." The State Department of Health reports that in 1939 there were 870 cases of typhoid in Illinois and that in 1949 up to October 1 there had been only 74 cases.

District Conference in Pekin.—A postgraduate conference has been arranged for the Fifth Councilor District at the Country Club, Pekin, November 17 with Harold M. Camp, Monmouth, secretary of the Illinois State Medical Society, and Ralph P. Peairs, Normal, councilor for the district, presiding and with the Tazewell County Medical Society acting as host. The following Chicago physicians will participate:

Samuel M. Bluefarb, New Methods in Dermatologic Treatment (kodachrome® slides).
Lyle A. Baker, Clinical Aspects of Pericarditis.
John W. Huffman, Cancer of the Cervix.
Frederick H. Falls, Cesarean Section.

A roundtable discussion will conclude the afternoon session. After a social hour and dinner, Dr. John T. Reynolds, Chicago, will discuss "Diagnostic Problems and Operative Precautions in the Treatment of the Acute Surgical Abdomen." This conference is one of twelve authorized for the 1949-1950 season by the Council of the Illinois State Medical Society and was arranged by its postgraduate Education Committee, of which Robert S. Berghoff and George A. Hellmuth, both of Chicago, are chairman and vice chairman, respectively.

Chicago

Assembly Hour Lectures.—Assembly Hour lectures were presented November 2 by Dr. Robert K. S. Lim, former surgeon general, Chinese Nationalist Army, visiting professor, University of Illinois, College of Medicine, Chicago, and by John J. DeBoer, Ph.D., professor of education, University of Illinois, Urbana, on November 9, at the University of Illinois, Chicago Professional Colleges.

Jaffé Memorial Lecture.—The fourth Richard H. Jaffé Memorial Lecture of the Institute of Medicine of Chicago will be delivered by Dr. Granville A. Bennett, professor and chairman of the department of pathology, University of Illinois College of Medicine, at the Palmer House, November 25 at 8 p. m., on "Reactive and Neoplastic Changes in Synovial Tissues."

Lectures on Legal Medicine.—Four lectures on Legal Medicine will be presented on December 5, 7 and 8 at the Chicago Medical School at 12:30 p. m. and December 10 at Mount Sinai Hospital at 11 a. m. Dr. Leone Lattes, chairman, department of medical jurisprudence at the University of Pavia, Italy, will lecture on "Identification of Blood Stains and Secretions," "Paternity Tests," "Legal Aspects of Industrial Medicine" and "Legal Medicine of Blood Transfusion."

Exhibit on Congenital Heart Disease.—The Hektoen Institute for Medical Research of the Cook County Hospital announces that a scientific exhibit, "Congenital Heart in Clinical Medicine," by Drs. Benjamin M. Gasul, Egbert H. Fell, Hans L. Popper, William P. Mavrelis, James A. Campbell, Maurice Lev, Carl Davis Jr., Hans Hartenstein and Raul Casas, received first prize at the fourteenth annual meeting of the Mississippi Valley Medical Society recently in St. Louis. The work of Dr. Gasul and his co-workers is being supported by the Galter Foundation and the Melvin L. Emerich Fund. On September 13 the Galter Foundation gave a grant of $10,000 to the Hektoen Institute, as a yearly subscription, toward the work of Dr. Gasul and his associates, for the study of heart diseases in children.

Research on Eclampsia.—A climate room, where the temperature can be varied from 50 to 110 F., has been built for eclampsia research at Chicago Lying-In Hospital and Dispensary of the University of Chicago. More than half the maternal deaths occurring in southern states are caused by toxemia of pregnancy, and eclampsia has occurred repeatedly when an abrupt change in the weather took place. The study is being conducted by Dr. William J. Dieckmann, chief of staff and Mary Campau Ryerson professor of obstetrics and gynecology. The research, accelerated by a $381,000 fiftieth anniversary gift to Lying-In by Chicagoans in 1945, has included dietary care centered on proteins, retention of salt and water and geographic and climate surveys. The climate room will also be available to the University of Chicago Clinics for studies of the proper temperatures and humidities for patients postoperatively and for the study of diseases which are intensified by certain climatic changes.

MICHIGAN

Dr. Smyth Goes to Denver.—Dr. Charles J. Smyth, Eloise, who has been assistant medical director of Wayne County General Hospital since 1941, left September 1 to become assistant director of postgraduate medicine and assistant professor of medicine at the University of Colorado, Denver. Dr. Smyth is a graduate of Jefferson Medical College of Philadelphia, 1935.

Survey of Children with Defective Hearing.—The Michigan Department of Health and local health departments are now carrying on a program to find children who have some degree of hearing loss which needs attention. In the six years since the program was started the hearing of more than 325,000 children in 62 Michigan counties has been tested, and, of that number, 3 per cent showed some hearing loss. Of those who received medical treatment, 75 per cent improved, about half of them to normal hearing.

NEW YORK

Joachim Lectures.—The seventh of the series of Dr. Henry Joachim Lectures on the Application of Fundamental Sciences in Medicine will be delivered by Dr. Harry S. Eagle, chief, experimental therapeutics, National Institutes of Health, Bethesda, Md., on "The Factors of Time and Dosage in the Therapeutic Use of Penicillin." The lecture will be presented November 28 at 8:45 p. m. in the Auditorium of the Jewish Sanitarium and Hospital for Chronic Diseases, Brooklyn.

Postgraduate Instruction.—The Medical Society of the State of New York with the cooperation of the New York State Department of Health has arranged postgraduate instruction for the Schoharie County Medical Society on November 15 and 22 at 4 p. m. at the Cobleskill High School. Dr. Edward F. Hartung, chief, Division of Arthritis, New York Post-Graduate Medical School and Hospital will speak November 15 on "Diagnosis and Treatment of Back Pain from the General Practitioner's Point of View." On November 22 Dr. David Lehr, assistant professor of pharmacology, New York Medical College, Flower and Fifth Avenue Hospitals, New York, will speak on "Chemotherapy of Bacterial Infections."

New York City

Harvey Lecture.—Irwin C. Gunsalus, Ph.D., professor of bacteriology, Indiana University, Bloomington, will deliver the second Harvey Lecture of the current series at the New York Academy of Medicine on November 17. Dr. Gunsalus will speak on "Comparative Metabolism: Bacterial Nutrition and Metabolic Function."

Appoint Professor of Anaesthesia.—Dr. Emanuel M. Papper, Flushing, has been named professor of anesthesia at Columbia University College of Physicians and Surgeons and attending anesthetist and executive officer of the anesthesia service, Presbyterian Hospital. Dr. Papper comes to the Columbia-Presbyterian Medical Center from New York University-

Bellevue Medical Center, where he has been associate professor of anesthesiology, New York University, and assistant to Dr. Emery A. Rovenstine, director of the Division of Anesthesia, Bellevue Hospital. Dr. Papper received his M.D. degree from New York University College of Medicine in 1938. He has held fellowships, internships and residencies at New York University and Bellevue Hospital. During the war he served four years in the U. S. Army and was chief of the Sections of Anesthesiology at Torney, Leibble and Walter Reed General hospitals.

Friday Afternoon Lectures.—The twenty-third series of Friday afternoon lectures sponsored by the New York Academy of Medicine, 2 East 103 Street, began November 4. The following lectures will be given during the remainder of the present year:

November 18, Effects of Rice Diets on Metabolism, Dr. Alexander Gutman, professor of medicine, Columbia University, College of Physicians and Surgeons.
December 2, Causes of Arteriosclerosis, William Dock, professor of medicine, Long Island College of Medicine.
December 9, Boeck's Sarcoid, Dr. I. Snapper, director of medical education, Mount Sinai Hospital.
December 16, Hormone Relationship to Rheumatic Disease, Dr. Richard H. Freyberg, associate professor of clinical medicine, Cornell University Medical College.

NORTH CAROLINA

Symposium on [illegible] The first annual symposium presented by [illegible] of Medicine will be held November [illegible] lter, Raleigh. The speakers will be:

Thomas T. Mackie, Winston-Salem, Acute and Chronic Infections of the Colon.
Henry W. Cave, New York, Surgery of Colon and Rectum.
Robert P. Barden, Philadelphia, Cancer of Gastrointestinal Tract as Seen by the Radiologist.
Louis A. M. Krause, Baltimore, Disease of the Liver, Gallbladder and Pancreas.
Richard B. Cattell, Boston, Surgery of Esophagus, Stomach and Duodenum.

A roundtable discussion will be held on "Newer Concepts of Peptic Ulcer Therapy."

OHIO

Present First Fifty Year Pin.—The first fifty year pin of the Ohio State Medical Association was presented to Dr. Edwin A. Murbach of Archbold at a homecoming celebration of the community in his honor. The pin was presented by Dr. Arthur A. Brindley of Toledo, immediate past president of the association. More than 1,200 former patients attended the celebration, and Dr. Murbach received an engraved gold wrist watch. He was acclaimed for his work as a member of the Archbold Board of Education for nearly fifty years; as a church leader and proponent of Fulton County's first hospital at Wauseon. The gold pins were authorized by the House of Delegates at the 1948 annual meeting and will be presented to members of the association who have been Doctors of Medicine for a half-century. The head quarters office has been compiling a list of physicians eligible to receive the pins.

PENNSYLVANIA

Army Doctor Talks on Atomic Medicine.—By request of the Medical Society of the State of Pennsylvania, Major Gerald M. McDonnel (MC) is presenting a series of talks on "Care and Treatment of Patients in the Event of Atomic Disaster" to county medical groups in Pennsylvania. Major McDonnel is chief of the Special Projects Division, Office of the Surgeon General. The talks have been given in Clearfield, Erie, Harrisburg, Johnstown and Lancaster since October 6. More engagements along similar lines have been made, to take place in the spring, at Oil City, April 5; Reading, April 12; Scranton, April 19; Washington, April 26; Allentown, May 2, and Williamsport, May 3.

Philadelphia

Meeting of Ex-Residents.—The sixty-third annual banquet of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held December 6 at 7 p. m. Reservations may be had by writing to the secretary-treasurer: Dr. R. C. McElroy, Room 514, 133 South 36th Street, Philadelphia 4.

Graduate School Appointments.—The following appointments have been made by the Graduate School of Medicine of the University of Pennsylvania: Dr. Henry L. Bockus, chairman, department of internal medicine; Dr. Herman Beerman, chairman, department of dermatology and syphilology, and James R. Cameron, D.D.S., acting director of the course in oral surgery and anesthesia.

SOUTH DAKOTA

University Appointment and Promotions.—Dr. James Steele, Brooklyn, has been appointed assistant professor of radiologic anatomy and clinical assistant professor of radiology at the University of South Dakota School of Medical Sciences, Vermillion. Dr. Steele is a graduate of Eclectic Medical College of New York, 1910. Dr. Francis J. Abts has been promoted to clinical associate professor of gynecology and Dr. Chester B. McVay to associate professor of surgical anatomy.

TEXAS

Meeting of Urologists.—The Texas Urological Society will meet at the Shamrock Hotel, Houston, on November 28. The meeting, which will consist of clinics, open discussions, luncheons and a banquet, will be open to all physicians interested in urology.

Residency in Psychiatry.—The Veterans Administration Hospital, Houston, in affiliation with the department of neuropsychiatry, Baylor University College of Medicine, Houston, is offering a three year residency in psychiatry. Information may be received from the Department of Neuropsychiatry, Baylor University College of Medicine, Houston.

UTAH

State Medical Election.—The Utah State Medical Association at its recent meeting elected the following officers for the year 1949-1950: Dr. Vivian P. White, Salt Lake City, president-elect; Conrad H. Jenson, Ogden, president; Thomas C. Weggeland, Salt Lake City, secretary, and Leslie J. Paul, Salt Lake City, treasurer.

WISCONSIN

The Annual Dearholt Days.—The tenth annual "Dearholt Days in Wisconsin" will be observed in Milwaukee and Madison November 14 and 15 with Drs. Michael L. Furcolow, U. S. Public Health Service, and Edward J. O'Brien, chief, thoracic surgery service at Herman Kiefer and Harper hospitals, Detroit, as speakers. The Milwaukee lectures will be given before the faculty and students of Marquette University School of Medicine, Milwaukee. A similar program will be presented the following afternoon at the University of Wisconsin's Service Memorial Institute and the evening program before the Dane County Medical Society at the Madison Club. Dr. Furcolow will address medical students on "Systemic Fungus Infections" and the medical societies on "Recent Research in Histoplasmosis." Dr. O'Brien's subjects will be "Present Day Treatment of Pulmonary Tuberculosis" and "Differential Diagnosis of Surgical Diseases of the Lung." Dearholt Days, dedicated to the medical students and general medical profession, are sponsored by the Wisconsin Anti-Tuberculosis Association, the Wisconsin Trudeau Society, the Dane County Medical Society and the two medical schools.

GENERAL

Meeting of Industrial Hygiene Foundation.—The fourteenth annual meeting of the Industrial Hygiene Foundation of America, Inc., will be held at the Mellon Institute, Pittsburgh, on November 16-18. A seminar on diabetes in industry will take place November 16. Among the doctors speaking are:

Howard F. Root, Boston, Detection of Diabetes in Industrial Workers.
Joseph T. Beardwood, Philadelphia, Industry's Role in the Employment of the Diabetic Person.
Joseph H. Barach, Pittsburgh, Diabetes in History.
John A. Reed, Washington, D. C., Management of Accidental Injuries to Diabetic Persons.

Dr. Crowell Receives Cancer Society Medal.—Dr. Bowman C. Crowell, Northwestern University Medical School, Chicago, has been awarded the American Cancer Society's 1949 medal (October 28) at the annual dinner of the society in New York. He was praised for "signal accomplishments in developing and extending improved services to cancer patients through diagnostic and treatment clinics." Dr. Crowell has lectured at Northwestern University since 1927 and has just retired as associate director of the American College of Surgeons, with which he had been connected since 1926.

Cerebral Palsy Association Appoints Director.—The United Cerebral Palsy Association, Inc., has appointed J. Patrick Rooney, associate director of the American Social Hygiene Association, as executive director of the association, the uniting agency for hundreds of cerebral palsy groups throughout the country. The association has been incorporated since the first national conference on cerebral palsy last February. The aims of the group are: to establish facilities for the treatment and education of cerebral palsied persons, to finance research for development of preventive methods and improved treatment, to develop training of urgently needed personnel and to carry on a program of public education. At the October 15 meeting of the Planning Conference, a National Cerebral Palsy Drive was planned for the Spring of 1950. The association was formerly called the National Foundation for Cerebral Palsy. Inc.

Courses in Radioisotopes.—The Oak Ridge Institute of Nuclear Studies announced that three additional basic courses in the technics of using radioisotopes as tracers will be held this winter. The dates of the courses are: January 2-27; January 30-February 25, and March 6-31, 1950. Thirty-two participants will be accepted for each course. Application for the January 2 course should be mailed prior to December 1. Each session is divided into laboratory work, lectures on laboratory experiments, general background lectures and special topic seminars. Seminar topics include the use of tracers in animal and human experimentation, design of radiochemical laboratories, dosimetry, instrumentation, the effects of radiation on living cells and the principles and practices of radiation protection. A registration fee of $25 is charged for each participant. Information may be obtained from Dr. Ralph T. Overman, chairman, Special Training Division, Oak Ridge Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn.

1949 Nobel Prize for Medicine.—For discoveries in the function of the brain Dr. Walter R. Hess, director of Zurich (Switzerland) University's Physiological Institute and Dr. Antonio C. de A. F. Egas Moniz, professor emeritus of neurology at Lisbon (Portugal) University Faculty of Medicine, will share the 1949 Nobel prize for medicine. Half of the $30,000 was awarded Dr. Hess for his studies of the reaction of animals to electric shocks that helped dispel previous theories concerning the effect of instinct, power of observation and natural intelligence on their behavior. Dr. Hess is a specialist in the circulation of the blood and breathing and has developed new conceptions of how the nervous system works. Dr. Moniz, author of many medical books, will receive the other half of the prize for devising and perfecting prefrontal lobotomy. The winners were chosen by the Caroline Institute at the University of Medicine in Stockholm. They will be presented their awards at a ceremony in Stockholm December 10 along with winners of the Nobel prizes for literature, physics and chemistry.

National Committee for the Improvement of Nursing Services.—The Subcommittee on School Data Analysis of the National Committee for the Improvement of Nursing Services has just completed a survey of the educational facilities of basic programs in nursing. Questionnaires were sent to schools of nursing in the United States, Hawaii and Puerto Rico. Through the cooperation of hospital, medical, educational and allied groups with the nursing profession, 96 per cent of the nation's 1,195 schools of nursing responded. Supplementary information included data published by the United States Office of Education, the American Hospital Association and the American Medical Association. The Study provides also material on resources of nursing education facilities which will be invaluable in regional planning for nursing education to meet the needs of nursing services.

The two groups into which schools of nursing have been classified are: group I, which includes 25 per cent of the basic programs in nursing—those with the highest standings, and group II, which includes 50 per cent of the basic programs in nursing—those with the middle standings. Not included in the classification is another 25 per cent of basic programs in nursing—those with the lowest standings, a few programs for which data were not returned and schools which requested not to be included.

Schools of nursing which participated in the survey have received confidential summary profiles together with explanatory letters. The profile showed the school the relative national standing of its basic program in nursing and some of its component factors. It also indicated whether the basic program of the schools was included in the classification and, if so, in what group it had been classified.

Mississippi River Survey.—In cooperation with the Minnesota Water Pollution Control Commission and the Iowa State Department of Health, the Wisconsin State Committee on Water Pollution has undertaken joint studies of the Mississippi River from the junction of the St. Croix River and the Mississippi River at Prescott to a point just above Government Dam no. 11 at Dubuque, Iowa. The section of the Mississippi River under consideration has a total of 240 stream miles, and a number of municipalities are located directly on it. The following conclusions were reached:

1. From the chemical information available, it is concluded that the Mississippi River is not excessively polluted in the section from La Crosse to Dubuque with the exception of a localized area at Prairie du Chien.
2. Pollutional conditions exist on Half-Way Creek at Holman, Isabell River at Ellsworth and La Crosse River at West Salem.
3. Sewage and industrial pollution results in high bacterial population at all stations. No stream location is safe for bathing, water supply or certain industrial uses due to potential hazard of water-borne diseases.
4. While sewage pollution of the Mississippi River may result in bacterial hazards to health, it does not appear that the present degree of pollution is more than locally detrimental to biologic stream welfare.

To determine the sources of the pollution of the Mississippi River and the tributary streams, a domestic and industrial waste survey was undertaken November 8-10, 1948. The report is available on request from the Wisconsin State Committee on Water Pollution, Madison.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

	Week Ended			Jan. 1 to	
Division and State	Oct. 29, 1949	Oct. 30, 1948	Median, 1944-1948	Oct. 29, 1949	Oct. 30, 1948
New England States					
Maine	6	..	..	435	37
New Hampshire	3	..	..	181	18
Vermont	10	2	2	135	22
Massachusetts	45	6	21	1,705	181
Rhode Island	6	..	..	151	8
Connecticut	34	5	8	575	112
Middle Atlantic States					
New York	152	55	55	5,072	1,321
New Jersey	52	25	25	1,350	715
Pennsylvania	39	25	22	734	669
East North Central States					
Ohio	57	14	25	1,661	1,074
Indiana	29	18	14	1,648	366
Illinois	53	21	27	2,705	1,013
	50	52	21	2,568*	662
	38	32	26	985	539
West North Central States					
Minnesota	62	63	24	1,778	1,161
Iowa	12	44	25	1,033	1,019
Missouri	19	1	12	1,271*	284
North Dakota	2	..	..	439	113
South Dakota	12	58	..	352	526
Nebraska	19	13	4	588	663
Kansas	16	5	5	684	288
South Atlantic States					
Delaware	..	2	2	42	128
Maryland	24	6	6	237	102
District of Columbia	7	6	3	99	123
Virginia	9	9	9	308	518
West Virginia	6	4	4	328	153
North Carolina	1	29	14	214	2,402
South Carolina	1	11	4	93	355
Georgia	9	3	3	201	215
Florida	8	8	6	228	245
East South Central States					
Kentucky	29	3	4	602	185
Tennessee	22	6	4	501	350
Alabama	6	2	3	228	200
Mississippi	3	4	4	314	147
West South Central States					
Arkansas	13	1	..	936*	134
Louisiana	2	..	4	215	134
Oklahoma	23	3	1	1,216	339
Texas	35	31	14	2,123	1,611
Mountain States					
Montana	4	7	2	89	67
Idaho	17	1	2	447	101
Wyoming	1	1	1	104	72
Colorado	19	3	3	614	110
New Mexico	3	5	3	190	75
Arizona	3	3	..	145	138
Utah	12	16	5	249	105
Nevada	..	..	..	15	7
Pacific States					
Washington	17	22	9	541	302
Oregon	13	7	4	264	159
California	68	198	36	2,155	4,150
Total	1,071	830	...	38,153*	23,418
Median, 1944-1948	....	...	581	17,437	

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* Deductions: Michigan, 2 cases week ended September 23 and 1 case week ended October 7; Missouri, 1 case week ended October 15; Arkansas, 1 case week ended July 23.

Marriages

William James Burokus, Maywood, N. J., to Carolyn Margaret Rovas, D.D.S., in Rochester, N. Y., July 16.

William Alfred Sawyer, Rochester, N. Y., to Miss Helen Cederquist of Jamestown in Winnetka, Ill., August 16.

Lawrence Lee Jr., Savannah, Ga., to Miss Elizabeth Middleton Andrews of Flat Rock, N. C., August 27.

Seth Sydney Philbrook, Piqua, Ohio, to Miss Rose Hart of Canal Winchester, August 19.

Deaths

Frederick Clyde Potter ⊕ Cuyahoga Falls, Ohio; born in Jenningsville, Pa., July 10, 1882; Medico-Chirurgical College of Philadelphia, 1909; specialist certified by the American Board of Pathology; fellow of the American College of Physicians, American Psychiatric Association, American Association for the Advancement of Science and the American Society of Clinical Pathologists; past president of the Summit County Medical Society and the Ohio Society of Clinical and Laboratory Diagnosis; formerly on the faculty of the Indiana University School of Medicine in Indianapolis, where he was affiliated with the Central State Hospital; at various times on the staffs of the Kalamazoo (Mich.) State Hospital and the Mercer (Pa.) Sanitarium; formerly consultant in pathology at the Citizens' Hospital, Barberton, director of the clinical laboratory and pathologist at the Peoples Hospital, pathologist at the Children's and St. Thomas hospitals all in Akron; served during World Wars I and II; died September 24, aged 67.

Phillips Norton Davis, Tangerine, Fla.; University of Vermont College of Medicine, Burlington, 1918; member of the American Urological Association, American Medical Association and the Missouri State Medical Association; fellow of the American College of Surgeons; for many years practiced in St. Louis, where he served as health commissioner and police surgeon and on the board of education; served during World Wars I and II; for six years chief of athletic examining board of Missouri; formerly affiliated with St. Louis City Sanitarium, St. Louis City Hospital, Evangelical Deaconess Hospital and St. John's Hospital, all in St. Louis; for many years consultant at the Veterans Administration Hospital in Jefferson Barracks; died August 29, aged 55, of coronary thrombosis.

William Duncan Reid, North Parsonfield, Me.; born in Newton, Mass., in 1885; Harvard Medical School, Boston, 1909; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served in France with the American Expeditionary Forces during World War I; served during World War II; formerly assistant professor of medicine at the Boston University School of Medicine; for many years on the staffs of the Boston Dispensary and Boston City Hospital; formerly on the staffs of the Waltham (Mass.) Hospital and the Massachusetts Memorial Hospitals in Boston; died September 29, aged 63, of myelogenous leukemia.

Vanderpoel Adriance, Williamstown, Mass.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1893; member of the American Medical Association; served during World War I; died August 22, aged 80, of cerebral hemorrhage.

Edward August Albers, Santa Monica, Calif.; Kansas City (Mo.) Medical College, 1903; died August 26, aged 72, of hypertensive cardiovascular disease and cerebral arteriosclerosis.

Anson Gaston Allen ⊕ Astoria, Ore.; University of Oregon Medical School, Portland, 1919; past president of the Clatsop County Medical Society; fellow of the American College of Surgeons; formerly associated with the U. S. Public Health Service; served during World War I; on the staffs of St. Mary's Hospital and the Columbia Hospital; died August 17, aged 57, of coronary occlusion.

Caroline Louise Avery, San Jose, Calif.; Cooper Medical College, San Francisco, 1897; died August 24, aged 84, of bronchopneumonia.

Mortimer Harry Bannister, Pearsall, Texas; University of Texas Faculty of Medicine, Galveston, 1940; member of the American Medical Association; served overseas during World War II; medical superintendent of Goodnight Clinic Hospital; killed in an airplane crash near San Antonio August 30, aged 34.

Paul Edward Belknap ⊕ Topeka, Kan.; University of Kansas School of Medicine, Kansas City, Kan., 1918; member of the American Academy of Pediatrics; served as a member of the city board of health; affiliated with St. Francis Hospital and Jane C. Stormont Hospital; died August 29, aged 57, of coronary thrombosis.

Henry Max Bernhardt, Arlington, Mass.; Boston University School of Medicine, 1935; member of the American Medical Association and the New England Pediatric Society; served during World War II; formerly assistant physician at the Philips Academy in Andover; physician for the Massachusetts Institute of Technology in Cambridge; died August 31, aged 40.

Basil Brown Gordon Blackstone ⊕ Wilmington, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1918; affiliated with the Delaware Hospital; died August 31, aged 57, of acute coronary occlusion.

William Frederick Boos ⊕ Fall River, Mass.; Harvard Medical School, Boston, 1901; author of "The Poison Trail"; died in Truesdale Convalescent Home August 11, aged 79, of chronic myocarditis.

William Warren Boyd ⊕ Spartanburg, S. C.; Medical College of the State of South Carolina, Charleston, 1909; past president of the Spartanburg County Medical Society; on the staff of the Spartanburg General Hospital, where he died August 12, aged 67, of cerebral hemorrhage.

Henry Percival Boyer ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1891; served on the staff of Stetson Hospital; died August 25, aged 80.

James Lennon Brennan, Washington, Pa.; University of the South Medical Department, Sewanee, Tenn., 1904; served during World War I; died August 30, aged 69.

Jacob Hemans Burley ⊕ Port Huron, Mich.; Saginaw Valley Medical College, Saginaw, 1899; past president and secretary of St. Clair County Medical Society; chairman of St. Clair County Health Unit; on the staff of Port Huron Hospital, where he died August 14, aged 71, of carcinoma of the prostate with metastasis.

John Wesley Burney, Atlanta; Meharry Medical College, Nashville, Tenn., 1913; died August 7, aged 60, of hypertensive heart disease.

James Clarence Connor ⊕ Cave Spring, Ga.; Birmingham Medical College, 1913; died August 4, aged 58, of cerebral hemorrhage.

Oscar Marvin Crenshaw, Lebanon, Ky.; Louisville (Ky.) Medical College, 1904; died August 14, aged 72, of carcinoma.

Arthur Herman Dellinger, Rome, Ga.; Emory University School of Medicine, Atlanta, 1916; member of the American Medical Association; past president of the Floyd County Medical Society; chairman of the Floyd County Board of Health; served during World War I; on the staffs of the Harbin and McCall hospitals; on the executive board and past president of the Floyd County Hospital; died August 26, aged 60, of coronary occlusion.

James W. Dorworth, Conneaut Lake, Pa.; Cleveland-Pulte Medical College, 1911; died August 30, aged 73, of coronary occlusion.

Robert H. Hodge, Athens, Texas; University of Texas School of Medicine, Galveston, 1905; member of the American Medical Association; past president of the Henderson County Medical Society; affiliated with the Henderson Memorial Hospital in Henderson; died recently, aged 69, of angina pectoris.

Harry Griffith Jones ⊕ Baltimore; Southern Homeopathic Medical College, Baltimore, 1905; on the staff of the Maryland General Hospital; died August 24, aged 68, of coronary occlusion.

Edward Leo Kaufman, Powellton, W. Va.; University of Maryland School of Medicine, Baltimore, 1920; died August 31, aged 56, of injuries received in an automobile accident.

Fayette Dwight Kendrick, St. Paul; University of Michigan Homeopathic Medical School, Ann Arbor, 1881; died in the Miller Hospital August 24, aged 92, of aortic stenosis.

Ernst Loeffler ⊕ Chicago; Medizinische Fakultat der Universitat, Wien, Germany, 1917; specialist certified by the American Board of Pathology; associate professor of pathology at the Loyola University School of Dentistry; research associate, Hektoen Institute for Medical Research of Cook County Hospital; formerly on the staff of Mount Sinai Hospital; died September 24, aged 57, of acute coronary thrombosis and pulmonary tuberculosis.

Kenneth C. Lum ⊕ Portland, Ore.; University of Oregon Medical School, Portland, 1924; affiliated with the Good Samaritan Hospital; died September 18, aged 50, of hypertensive cardiovascular disease.

Charles Amne Lusk, Butler, Mo.; University Medical College of Kansas City, 1910; member of the American Medical Association; served on the staffs of the Research and Trinity Lutheran hospitals in Kansas City and the Butler

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⊕ Indicates "Fellow" of the *American Medical Association.*

Memorial Hospital; died in Kansas City August 27, aged 76, of chronic myocarditis.

Claudio Emmett McNenney ⊕ Jersey City, N. J.; Columbia University College of Physicians and Surgeons, New York, 1904; chief of the bureau of communicable diseases of Jersey City; epidemiologist for the Jersey City Medical Center, where he died September 12, aged 68, of bronchopneumonia and arteriosclerotic heart disease.

Augustus Hamlin Mandell, New Bedford, Mass.; New York University Medical College, New York, 1897; Cornell University Medical College, New York, 1899; member of the American Medical Association; for many years city bacteriologist; affiliated with St. Luke's Hospital and Sassaquin Sanatorium; died September 3, aged 81.

Norman Edward Marion ⊕ Big Rock, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; died in Sturgeon Bay, Wis., October 4, aged 64, of coronary thrombosis.

Donald Burr Marsh, Deming, N. M.; University of Michigan Homeopathic Medical School, Ann Arbor, 1915; secretary of the Luna County Medical Society; member of the American Medical Association; an officer in the medical corps of the U. S. Army during World War I; died in the Physicians and Surgeons Hospital September 1, aged 57, of primary carcinoma of the lung.

John Perry Mathias, Mediapolis, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1902; member of the American Medical Association; died in a hospital at Kearney, Neb., August 3, aged 80, of injuries received in an automobile accident.

Frank Raymond Mehler ⊕ New London, Iowa; State University of Iowa College of Medicine, Iowa City, 1930; served on the staffs of the Mercy and Burlington Protestant hospitals in Burlington; died in Burlington August 23, aged 44, of cerebral hemorrhage.

Percy Shepherd Merrill ⊕ Waterville, Maine; University and Bellevue Hospital Medical College, New York, 1899; a director of the Federal Trust Company; died September 10, aged 75.

Harry R. Miller, Chicago; John A. Creighton Medical College, Omaha, 1895; died September 30, aged 94, of chronic myocarditis and prostatic hypertrophy.

Myron Eli Millhon ⊕ Columbus, Ohio; Jefferson Medical College of Philadelphia, 1923; on the staff of the White Cross Hospital; died September 28, aged 55, of coronary heart disease.

Mildred Lee Murray ⊕ El Paso, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1928; died September 11, aged 45, of contusion of brain and fracture of the fourth cervical vertebra.

Truman Alfred Parker ⊕ La Jolla, Calif.; University College of Medicine, Richmond, 1899; an Associate Fellow of the American Medical Association; died in San Diego September 4, aged 74, of myocarditis and arteriosclerosis.

William Wellesley Percy ⊕ Rochester, N. Y.; Syracuse University College of Medicine, 1901; life member and for many years executive director of the Rochester Academy of Medicine; fellow of the American College of Surgeons; veteran of the Spanish-American War and World War I; affiliated with St. Mary's Hospital; died in Churchville August 9, aged 75, of cerebral thrombosis.

William La Cland Peters, Hendersonville, N. C.; Missouri Medical College, St. Louis, 1898; died September 1, aged 83.

John Thomas Pettit, Canton, Ga.; Atlanta School of Medicine, 1910; member of the American Medical Association; served as mayor of Canton; died August 10, aged 69.

Henry Garnett Plaster, Washington, D. C.; University College of Medicine, Richmond, 1899; member of the American Medical Association; died August 2, aged 70, of coronary occlusion.

James Henry Preas, Johnson City, Tenn.; Jefferson Medical College of Philadelphia, 1886; died September 7, aged 87, of coronary sclerosis.

Robert David Prendergast, Lakewood, Ohio; St. Louis University School of Medicine, 1947; served an internship and residency at St. John's Hospital in Cleveland; first lieutenant in the medical corps of the U. S. Army; died in the hospital at Forbes Air Base in Topeka, Kan., August 21, aged 25, of poliomyelitis.

John Elry Prest, Trenton, Neb.; University of Nebraska College of Medicine, Omaha, 1904; member of the American Medical Association; affiliated with St. Catherine of Sienna Hospital, McCook, where he died July 5, aged 71, of cerebral embolus.

Harold Franklin Preston ⊕ Melrose, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1915; member of the county board of education; died in the Riverside Hospital, Jacksonville, August 17, aged 61, of pyemia.

William Sherman Randall, Shelton, Conn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1886; for many years health officer of Shelton; served as a member of the state legislature; affiliated with the New Haven (Conn.) General Hospital and the Griffin Hospital in Derby; died August 13, aged 88, of coronary thrombosis.

Budd Jameson Reaser, Martins Creek, Pa.; University of Maryland School of Medicine, Baltimore, 1909; member of the American Medical Association; served as president of the Northampton County Board of Prison Inspectors; died August 8, aged 66, of cardiac failure.

William Frederick Reasner ⊕ Santa Monica, Calif.; Jenner Medical College, Chicago, 1913; for many years district health officer of Los Angeles County; at one time health director of Norfolk County, Va., and assistant to the director of health in Minneapolis; on the staff of the Santa Monica Hospital; died October 2, aged 72, of coronary sclerosis.

Harold Renaud Reed, Cheverly, Md.; Jefferson Medical College of Philadelphia, 1915; specialist certified by the American Board of Radiology; served during World War I; formerly chief radiologist at the Gallinger Municipal Hospital in Washington, D. C.; chief radiologist at the Prince George's General Hospital; died October 1, aged 58, of coronary occlusion.

Edward Nelaton Reeve, Baldwin, N. Y.; Long Island College Hospital, Brooklyn, 1915; died August 6, aged 58.

John Reith, College Place, Wash.; University of Oregon Medical School, Portland, 1911; member of the American Medical Association; died August 20, aged 66.

Harry Rich, St. Louis; Washington University School of Medicine, St. Louis, 1908; died in the Jewish Hospital August 19, aged 64, of heart disease.

James Robert Richardson, Union, W. Va.; University of Louisville (Ky.) Medical Department, 1910; county health officer; died in the Greenbrier Valley Hospital, Ronceverte, August 19, aged 68, of coronary thrombosis.

Justus Elijah Richardson, Axton, Va.; Hospital College of Medicine, Louisville, Ky., 1905; died in the Martinsville (Va.) General Hospital August 9, aged 69, of diabetes mellitus and hypertension.

Ferdinand August Ries ⊕ Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1921; medical examiner for the department of public welfare; died recently, aged 50.

Frank Palmer Riggle, Cedar Rapids, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1900; member of the American Medical Association; served during World War I; died in St. Luke's Hospital August 24, aged 76, of heart disease.

William F. Rogers, St. Joe, Ark.; University of Arkansas School of Medicine, Little Rock, 1888; member of the American Medical Association; died August 5, aged 81, of heart disease.

Charles Frederick Rosenberger ⊕ University City, Mo.; St. Louis University School of Medicine, 1927; member of the city board of health; assistant in surgery at his alma mater; affiliated with St. Mary's Group of Hospitals, St. Louis City Hospital and the Jewish Hospital in St. Louis, where he died August 23, aged 54, of cerebral hemorrhage.

Henry Roth ⊕ New York; University of the City of New York Medical Department, 1893; formerly on the faculty of the Fordham University School of Medicine; fellow of the American College of Surgeons; honorary director of surgery at the Lebanon Hospital; consulting surgeon to the Union Hospital and the Bronx Eye and Ear Infirmary; died September 11, aged 77, of coronary occlusion.

Arthur G. Rounseville, Phoenix, Ariz.; Kansas City (Mo.) Medical College, 1889; at one time health officer of Coconino County and the city of Williams; died August 9, aged 81, of cerebral thrombosis and arteriosclerosis.

Adrian David Rubin ⊕ Asbury Park, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1930; for many years a member of the board of education; city physician; affiliated with the Monmouth Memorial Hospital in Long Branch; died August 9, aged 45, of coronary thrombosis.

Foreign Letters

ITALY

(From Our Regular Correspondent)

FLORENCE, Sept. 15, 1949.

Meeting of Gastroenterologists

At a meeting of the Piedmontese Section of the Italian Society of Gastroenterology, A. Gambigliani-Zoccoli and A. Cappa discussed the tests of parenchymal function of the liver and suggested that the azotemic curve of the urea content should be adopted as a function test. After blood had been withdrawn for the determination of the basal azotemia, the patient was given 0.17 Gm. of urea for every kilogram of body weight; blood was then withdrawn and the azotemia determined at intervals of half an hour, one hour and two, three, four and five hours. The curves obtained in the presence of a disturbance of the parenchyma were of the following types: concealed, linear, high with initial lowering and progressive increase. These curves, in the order listed, demonstrate progressively increasing parenchymal damage. The speakers reached these conclusions by comparing the results of this test with those of other function tests and by comparing the various curves with the microscopic observations made following biopsy of the liver.

The test may be useful clinically in differentiating icterus due to hepatitis from icterus due to occlusion; in the evaluation of parenchymal damage in cirrhosis and of the effect of lipotropic therapy, and in the evaluation of parenchymal damage as a residuum of hepatitis. The test is useful also for the surgeon.

Dr. Banche reported research on the variations of the chemical function of the stomach stimulated by barbituric preparations administered intravenously and on their effect on ulcers of the stomach and duodenum. The speaker discussed the variations of the chemical function of the stomach and the clinical and roentgenologic changes observed after intravenous injections of a barbituric derivative in a number of normal persons, patients with gastroenteric disease and patients with ulcers. The number of injections varied from ten to twenty, and the dose varied from 4 to 10 cc.; the compound used was isopropylbromoallyl-N-methylethylmalonyl urea. In 66 per cent of the treated patients a definite reduction of the values of acidity and of the amount of gastric juice excreted was observed.

The speaker observed that in general, after a first short phase of exacerbation, there was progressive clinical improvement with disappearance of pain, pronounced gain in body weight and regression of the ulcer on roentgenologic examination. In 3 patients this state of well-being continued for about one year.

The speaker pointed out that the ulcer may be the result of a severe disturbance of the neurovegetative equilibrium secondary to anatomic changes or also to persistent disturbances of the diencephalic centers of the neurovegetative system and partially to cortical disturbances. The barbituric derivative, administered intravenously, may affect the mechanism of the gastroduodenal physiopathology through a moderating sedative action on the nervous centers.

Professor Allodi emphasized the importance of the research carried out by his assistant, Dr. Banche. In his hospital department, Dr. Banche and Dr. Givogre carried out experiments on the behavior of the chemical function of the stomach during physiologic sleep and on the nocturnal secretion of the stomach. The studies conducted during physiologic sleep demonstrated that the gastric secretion is diminished in the first hours of the morning to minimum values of secretion and acidity in normal subjects and also in those affected by hypersecretion. In contrast to these observations, the secretion may be a continuous one in persons with ulcers and particularly in those with duodenal ulcers. During sleep induced by barbiturates in patients with ulcer, one observes also a pronounced diminution of the values of the chemical function. This phenomenon, according to the speaker, may be explained by considering that in physiologic sleep there is still possible the provocation of reflexes with a spinal starting point and, when the sleep is not deep, stimuli with a starting point in the superior encephalic centers may be effective, while in induced sleep conditions probably may occur which are fairly similar to those observed when the stomach is isolated completely from the superior centers, as in low vagotomy.

The results of the research on the nocturnal secretion and on the secretion in sleep induced by barbiturates also confirmed the presence of a mechanical stimulation of the chemical function of the stomach in man, a stimulation which already had been admitted by Girardi and then by Dr. Allodi in opposition to the results of the investigations on animals by Pavlov. In fact, the values of the chemical function in this person during sleep are different whether the tube is maintained in the stomach for the entire duration of the sleep or whether the tube is introduced only when the person is awakened to pump out the gastric juice.

R. Triolo discussed his attempts at topical treatment in some forms of chronic gastritis. He performed lavage of the stomach with strong protein silver and methylene blue in 10 patients with gastritis of the antrum or gastritis of the stump, in cycles of ten lavages, one on every other day. Gastroscopic examination of the patients was carried out at the end of the cure and for several months after its discontinuation, and good results were obtained from the clinical and gastroscopic points of view.

A. Gambigliani Zoccoli and C. Franzini described a new method for the rapid determination of the urobilinogen in the urine and in the feces. The method is the "two hour test" by Wazzon. By comparing the values obtained by Wazzon's two hour test with those obtained by Terwen's method of determining the twenty-four hour urobilinogen they noted a definite parallelism in the course of the elimination of the urobilinogen in the urine. Although the method does not furnish absolutely exact values, the speakers recommend it because of its simplicity and for its particular indication for the evaluation of hepatic damage and as a diagnostic aid in icterus.

PARIS

(From Our Regular Correspondent)

Oct. 5, 1949.

Hyperthyroidism

R. R. Cachera, M. Lamotte, F. Darnis and J. Raynaud (*Semaine des Hôpitaux de Paris* 25: 1659 [May 26] 1949) measured the extracellular fluid in 14 cases of hyperthyroidism. Using the thiocyanate method they found an average of 28.5 per cent of body weight (normal, 21.1 per cent). This increase of extracellular water did not seem to be related to the basal metabolic rate. In 3 of these patients with a body weight greater than the normal range, higher values were also found for thiocyanate volume (30.4, 23.4 and 25.3 per cent), in contrast with the usual low thiocyanate volume in obesity. The high level of extracellular fluid in hyperthyroidism explains the tendency of such patients toward slight edema, as many authors have noted. After treatment, there is in all cases a diminution of the thiocyanate volume. It is remarkable that hyperthyroidism, like hypothyroidism, can increase the extracellular water content. There is probably an entirely different mechanism operating in each of these two opposite states.

Hypertension During Pregnancy

P. Milliez, C. Laroche, D. Fritel and S. Kologlu (Société de Pathologie rénale, in *J. d'urol.* 55:182, 1949) made careful roentgenographic examinations of the kidneys in 25 pregnant women with hypertension; in 14 cases there were evident abnormalities of the renal pelvis or of the ureters that could be seen in the pyelograms. A detailed study of these cases indicated the importance of local renal factors as a cause of hypertension during pregnancy. Pyelonephritis is the most frequent of these renal conditions and must be immediately and carefully treated. Congenital abnormalities of the ureter of the renal pelvis are also found much more frequently in pregnant women with hypertension than in normal pregnant women.

Leukoencephalitis

F. Lhermitte (to be published) made an extensive study of leukoencephalitis. Three different types must be distinguished: (*a*) perivenous encephalitis (including Hanot's hemorrhagic leukoencephalitis), (*b*) a type including multiple sclerosis and the inflammatory form of Schilder's disease and (*c*) Van Bogaert's leukoencephalitis. The first one (perivenous encephalitis) is the only true leukoencephalitis. The second type is different, as its main feature is myelonecrosis. The third type (Van Bogaert's encephalitis) is actually panmyelitis. The experimental allergic types of encephalomyelitis, which have been described by Kabat, Wolf and Bezer and confirmed by Lhermitte, belong to the first type (perivenous encephalitis). For that reason, they cannot be considered experimental multiple sclerosis from the pathologic point of view.

Creation of an Infancy Center

The executive council of the World Health Organization, jointly with the International Fund for Aid to Infants, has decided to grant aid for the establishment of an infancy center in Paris which will be an institute for research and technical information. The help of the World Health Organization will consist, among other things, of international scholarships for the study of hygiene and of the protection of infancy, social pediatry and the formation of teams of sanitarians and social visitors for the reeducation of crippled or backward children. The World Health Organization will place at the disposal of the center experts to help in teaching and research.

TURKEY

(From Our Regular Correspondent)

ANKARA, Oct. 12, 1949.

Physicians—Supply and Demand

The Istanbul medical school was established in 1826 under Sultan Mahmud II (1785-1839) and for fifty-six years was primarily supplying the army with physicians and surgeons. In 1882 a separate department for the training of physicians to serve the civilian population was established. In 1909 the two schools merged and were transferred to the new building in Haydar Pasha and became the Istanbul medical faculty of Istanbul University. During the Ottoman Empire, which terminated in 1923, there was a medical school in Damascus which drew students from the natives of that region.

The first women students were admitted to the Istanbul medical school in 1922, one year before the advent of the republic. In 1945 a medical school was opened in Ankara. In 1923 there was 1 physician to every 6,000 inhabitants. Now, after twenty-five years of the republic, there is 1 physician to every 2,500 inhabitants. The need for even more physicians is obvious. The number of students seeking admission to the medical schools has greatly increased in recent years, but, because the two schools have facilities for only 700 to 800 students, most of the 5,000 applicants have to be refused, which results in restriction and in high entrance requirements. Plans for a third medical school in the eastern provinces of Erzurum or Van have been considered often. In 1933 Istanbul University was reorganized. At the medical faculty there are at present 14 ordinarius professors, 31 associate and assistant professors, 43 private docents and 5 foreign professors. Since 1909, when the original two schools merged, army medical students have studied at the medical faculty but have continued to live at the old dormitories. At present the military medical academy has a five story dormitory under construction; after its completion, the military students of Istanbul University will pursue their studies at the Ankara medical school.

Since 1924 the Ministry of Health and Social Assistance has maintained in Istanbul a dormitory for almost 960 students. At present 659 students receive free board and maintenance and are supplied with every article of clothing and other necessities, including textbooks. In addition, they receive a monthly allowance for six years. The graduates repay the government with four years of compulsory service. Mostly they are given appointments as government physicians (medical officers of health) in malaria, trachoma and venereal disease campaigns. At the military medical academy there are at present 295 students. The number of students at Istanbul medical school in 1947-1948 was 3,107, of which 2,791 were men. In 1947-1948, 404 diplomas were issued.

The number of students of Ankara medical school in 1947-1948 at the dormitory of the ministry of health was 102, and at the army medical dormitory 165. Of a total of 541 students, only 39 women and 235 men were not living in a dormitory.

The Blood and Bone Marrow in Pellagra

Dr. Muin Memduh Tayanç, chief of the medical department of the Istanbul Municipal Cerrah Pasha Hospital, reported on his sternal puncture and bone marrow investigation in 21 patients with pellagra. Hunter's glossitis, pigmentary dermatosis on the face, hands and feet, diarrhea, asthenia, depression and advanced anemia were present in all patients. Several patients presented severe melancholia; 3 patients had undergone a stomach resection and gastroenterostomy; 1 patient had uremia, 1 had rectocolitis, and 1 patient had hemorrhagic symptoms. The megaloblastic reaction was strongly positive in 2 patients. Systematic examination of the bone marrow and circulating blood revealed: 1. Anemia of average severity was present in the circulating blood of all patients. 2. There was no leukopenia or thrombopenia, and leukopoiesis was normal; if the skin was infected, leukocytosis was present. 3. Tests of the bone marrow revealed a strongly positive erythroblastic reaction. 4. Macroblasts were not always found, but several times normoblasts and megaloblasts were observed in exhausted bone marrow. 5. There was a decrease in adult leukocytes, and toxigenic granulation was encountered several times. 6. The megakaryocyte reaction was positive in various degrees; morphologic changes were absent. 7. The plasmocyte reaction was positive. 8. Slight lymphocytosis and eosinophilia were present. Though neither the blood nor the bone marrow showed special characteristics that would lead to a definite diagnosis of pellagra, the examination of the blood is important. The presence of toxigenic granulation, erythroblasts and plasmocytes in the granulocyte count is important. The investigation of blood and bone marrow is an invaluable aid to the diagnosis and prognosis of the disease.

Correspondence

INSULIN ECONOMY

To the Editor:—An editorial on "Insulin Economy" in The Journal (**140**:1159 [Aug. 6] 1949), calls attention to the fact that the author of the article on which this editorial is based did not propose any theory to explain the action of glycine, when injected subcutaneously, on insulin behavior.

Glycine was considered particularly suited to this investigation, largely because of its outstanding specific dynamic action and its detoxifying properties within the animal body. (The author had not become aware of the investigations subsequently quoted in his article at the time when this investigation was begun.) The author had considered it possible that the diabetic state is primarily a disease of the metabolizing tissue cells, of those of muscle in particular, and that the deterioration of the islands of Langerhans is a consequence of this through the excessive demands made on them. Others have no doubt indulged in similar speculation.

Any theory involved would be concerned with the possibility that ingested glycine, which is transported to the liver immediately after its absorption by the portal vein, is there acted on (perhaps in the production of a labile combination with plasma protein) so as to become less readily available to tissue cells. Injected glycine, on the other hand, would remain more readily available until it, too, had been transported to the liver. On the basis of such speculation, experiments were started last April with a group of albino rats, one half of which received subcutaneous injections of glycine containing the radioactive carbon atom C^{14} in its methyl group, while the other half were given similar amounts of the same glycine administered orally. Samples of whole blood, plasma and cells, liver, spleen, muscle and aqueous extracts of muscle were preserved in a desiccated form for the subsequent determination of the content of C^{14}. The analyses of these have not been completed, but results thus far indicate a difference in the distribution of C^{14} in accordance with this difference in the manner of administration.

Other phenomena (which were omitted in publication, but reference to some of which was made before the Vanderbilt Medical Society) became evident when rabbits received injections of glycine. Quantitative data concerning these have thus far been difficult to obtain. One observation was the apparent effect of injected glycine on the bleeding time. When blood samples are taken by puncturing a peripheral vein of the ear, it is usually difficult to stop the flow of blood in rabbits in which the blood sugar approaches the convulsive level. In animals which had been treated with glycine, bleeding at this low level of blood sugar could readily be stopped. Frequently the flow of blood was arrested spontaneously before an entire sample (0.1 cc.) had been taken. The clotting time of blood, determined by standard methods, was not affected by the treatment with glycine. The determination of the bleeding time by standard methods did not prove practical.

Another observation concerns the well-being induced in animals by injections of glycine. The fur of some of these became unusually smooth and shiny. They seemed more alert, a condition which was indicated by the practice of ejecting their urine at anyone within range (male rabbits were used), a practice not indulged in by any of the untreated animals.

If treatment with glycine should prove of practical value it might be anticipated that diabetes at an early stage could be arrested so as to permit the reestablishment of a normal state of metabolism and the conservation of the activity of the islands of Langerhans. Anyone inclined to such speculation might also anticipate that numerous other pathologic conditions within the animal body, possibly resulting from a faulty metabolism, may also be affected by glycine injections.

J. M. Johlin, Ph.D., Nashville, Tenn.

BLACK TONGUE

To the Editor:—I would appreciate the opportunity of commenting on the correspondence from Dr. Clarence Shaw which appeared in The Journal (141:148 [Sept.] 1949).

I am greatly indebted to Dr. Shaw for his letter to the Editor in which he pointed out that I apparently overlooked the reference to the association of black tongue and penicillin therapy by Dr. Shaw in Conn's "Current Therapy" (Philadelphia, W. B. Saunders Company, 1949). I might better have stated that no case reports had appeared in the American medical journals rather than that no reference had been made to the condition. The reference to the condition in Conn's "Current Therapy" gives no indication whether this was a personal observation or was information derived from other sources.

Dr. Shaw appropriately pointed out the reference to sulfanilamide therapy and black tongue; however, it was not the purpose of the manuscript to detail the many substances which may occasion black tongue. Andrews, in "Diseases of the Skin" (ed. 3, Philadelphia, W. B. Saunders Company, 1946), alludes to Oppenheim's ability to produce black tongue by the repeated application of tinctures containing vegetable coloring matter. Andrews included no reference, but a personal communication from Dr. Oppenheim indicated that the principal offending agent was tinctura Krameria (Oppenheim, M.: *Wien. klin. Wchnschr.* No. 23, 1917). Also, Dr. Eric Barrett, Beverly Hills, Calif., states that he has observed black tongue resulting from streptomycin therapy (personal communication). Undoubtedly the list will grow with the introduction of newer therapeutic agents.

Samuel A. Wolfson, M.D., Los Angeles.

BURNS DUE TO FLUORESCENT LIGHT

To the Editor:—Dr. R. Ralph Bresler in "Cutaneous Burns Due to Fluorescent Light" (J. A. M. A. **140**:1334 [Aug. 27] 1949) mentions that there has been only one previous report of this condition.

He would not, however, be expected to find a brief reference to the same condition in a more or less general review of occupational hazards. In such a review published in *Clinics* (3:774-788, 1944) I stated, "Industrial physicians should always be on the alert for new hazards. I have already seen cases of cutaneous eruptions resulting from light sensitivities due to exposure to fluorescent light." This observation was made after seeing 2 proved cases of such eruption and 2 patients who failed to return for further observation.

J. G. Downing, M.D., Boston.

BENJAMIN WATERHOUSE

To the Editor:—At the bottom of page 254 in The Journal, Sept. 24, 1949, is a quotation from a release from the Surgeon General's Office which begins: "In 1800, Benjamin Waterhouse, an Army surgeon, brought vaccination to the United States." I could not help raising an eyebrow at this description of Waterhouse, who held the initial appointment as professor of the theory and practice of physic at Harvard at the time of his historic accomplishment.

Waterhouse resigned from his professorship in 1812 after a bitter wrangle with his colleagues, and according to the Dictionary of American Biography, ". . . in 1813 Madison appointed him medical superintendent of all the military posts in New England, a position which he held until 1820."

If the Surgeon General's office would say, "In 1800, Benjamin Waterhouse, first professor of the theory and practice of physic at Harvard Medical School, who thirteen years later became an Army surgeon, brought vaccination to the United States," the cause of historical accuracy would be better served.

Howard N. Simpson, M.D., Springfield, Mass.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Part III.* Boston, Chicago and New York, January. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Written.* Various locations. July 21. *Oral.* Philadelphia, April 23-27, Chicago, October 8-12. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22.

American Board of Internal Medicine: *Oral.* Chicago, Feb. 8-10. Boston, April 13-15. San Francisco, June 21-23. The oral examinations in the subspecialties will be held at the same time and places. Final date for filing applications for all examinations is Jan. 1. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven, Conn.

American Board of Obstetrics and Gynecology, Inc. *Written and Reviews of Case Histories. Part I.* Various Centers. Feb. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Alaska: Juneau, March 7. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Colorado: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

Florida: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Hawaii: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

North Carolina: *Endorsement.* Raleigh, Jan. 23. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: * *Examination.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Dakota: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy. Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Proper Selection of Medical Panel.—The appellant filed a claim for compensation for disability resulting from an occupational disease. An award was granted, but the appellant appealed to the Supreme Court of Idaho.

Since the claim involved a medical question, a medical panel was selected by the board and reference made thereto. The appellant contended that this medical panel had been improperly selected.

Section 72-1227 of the Idaho statutes provides that the governor shall appoint, from recommended eligible persons, a silicosis panel of six physicians, four of whom shall have had at least five years' experience in silicosis and two in roentgenology. As needed, the board shall select three of these for a medical panel. In this case the board selected two from such silicosis panel of six; the third, though formerly a member, was not then one of the six appointed by the governor for the pertinent period.

The functions of a grand jury are similar to those of the medical panel, said the Supreme Court. Those serving on a grand jury must be properly selected and, on a parity of reasoning, if the medical panel is not selected in accordance with the statute, it would not be a legal body—hence its decision, though unanimous, would be a nullity. The terms of the statute relating to the appointment of the panel are controlling, and, in mandatory terms, they require the medical panel to be drawn from the silicosis panel. This was not done, said the Supreme Court. No properly constituted medical panel having considered the appellant's case, the court concluded, the award in favor of the appellant was set aside and the cause was remanded to the board to refer the claim to a valid panel.—*Munroe v. Sullivan Mining Co., 207 P. (2d) 547 (Idaho, 1949).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

57:1037-1238 (June) 1949

Nutrition and Human Reproduction: Historical Review. R. D. Mussey.—p. 1037.
Medicine's Response to Challenge of Our Time. R. B. Allen.—p. 1049.
Survey of 113 Cases of Primary Dysmenorrhea Treated by Neurectomy. O'D. Browne.—p. 1053.
Operative Procedures for Treatment of Sterility and Ovarian Dysfunctions. J. L. Reycraft.—p. 1069.
Study and Classification of Pelvic Inflammatory Disease. R. W. Mohler.—p. 1077.
Retroperitoneal Lymph Node Dissection in Cancer of Cervix. J. V. Meigs, L. Parsons and I. T. Nathanson.—p. 1087.
Attack upon Delay Period in Diagnosis of Pelvic Cancer with Further Observation of Philadelphia Study. J. Y. Howson and T. L. Montgomery.—p. 1098.
*Clinical and Pathological Studies of Feminizing Tumors of Ovary. F. H. Falls, A. B. Ragins and M. Goldenberg.—p. 1107.
Nonneoplastic Ovarian Cysts: Their Relation to Spiral Arteries in Human Ovary. B. Delson.—p. 1120.
*Early Diagnosis of Carcinoma of Cervix with Emphasis on Routine Biopsy. F. R. Lock and J. B. Caldwell.—p. 1133.
Ectopic Pregnancy, Mortality and Morbidity Factors. C. G. Collins, W. D. Beacham and D. W. Beacham.—p. 1144.
Know the Pelvis. W. T. Kennedy.—p. 1155.
Report on Cesarean Sections Done in St. Vincent's Hospital, New York. J. P. Hennessy.—p. 1167.
Role of Penicillin in Obstetrics. L. M. Harris and D. M. Shook.—p. 1186.
Continuous Spinal Anesthesia in Cesarean Section. C. B. Lull and J. C. Ullery.—p. 1199.
Elderly Primigravid Women. L. M. Randall and J. C. Taylor.—p. 1210.

Feminizing Tumors of Ovary.—Falls and associates reviewed the feminizing ovarian tumors in the surgical material at Cook County Hospital collected from July 1931 through December 1946. A total of 1,622 tumors of the ovary were examined. Of these, 59, or 3.6 per cent, were feminizing tumors, the granulosa cell group comprising 1.78 per cent and the theca cell group 1.82 per cent. Thirty-nine cases of feminizing tumor of the ovary were available for study. The incidence was found to be 10 per cent greater than expected in the Negro race, which was due almost entirely to the increased occurrence of theca cell tumor among the Negroes. Of the granulosa cell tumors, 9, or 31 per cent, were malignant, and these occurred mostly in the older age group, beyond the third decade. The incidence of theca cell tumor was found to be 23 per cent greater in the Negro race than expected. Postmenopausal bleeding is not indicative of feminizing tumor of the ovary until other pathologic conditions have been ruled out. Feminizing tumor of the ovary with postmenopausal bleeding may be associated with and obscured by other pelvic disease. The absence of postmenopausal bleeding does not rule out the possibility of feminizing tumor of the ovary.

Routine Biopsy in Early Diagnosis of Carcinoma of Cervix.—Lock and Caldwell say that in the clinics of the Bowman Gray School of Medicine and the North Carolina Baptist Hospital a cervical biopsy is performed in every case in which the appearance of the cervix shows any deviation from the normal. The results of this policy over a five year period have been reviewed. During 10,014 visits 1,979 biopsy specimens were taken and 165 cases of cervical carcinoma were discovered. Thirteen of the 165 patients with carcinoma of the cervix had no symptoms. In 17 only leukorrhea was present. The remainder had other symptoms suggestive of genital cancer. Of this series of patients, 72.7 per cent had stage 1 or stage 2 involvement. Twenty-nine cases of carcinoma were discovered which were clinically considered to be benign cervical disease. The policy of performing a biopsy in every case in which any abnormality of the cervix is observed has resulted in the diagnosis of increasing numbers of early cases of cervical cancer.

American Journal of Ophthalmology, Chicago

32:625-762 (May) 1949

Studies on Clinical Physiology of Cornea: Interrelationship of Corneal Turgescence, Epithelial Edema, Bullous Keratopathy, and Interstitial Vascularization. D. G. Cogan.—p. 625.
Operation for Chronic Primary Glaucoma: Goniodialysis Combined with Sclerectomy and Iris Inclusion. J. Laval.—p. 634.
Sutures Used in Cataract Surgery: Review. D. P. Bell.—p. 639.
Amount of Eye Movement Objectively Perceptible to Unaided Eye. E. Ludvigh.—p. 649.
Regeneration of Nerves in Experimental Corneal Grafts in Rabbits: Clinical and Histologic Study. W. Kornblueth, A. E. Maumenee and J. E. Crowell.—p. 651.
Case of Sensitivity to Gold-Ball Orbital Implant: Eczematous Contact-Type Dermatitis Due to 14-Karat Gold. H. W. Forster Jr. and R. F. Dickey.—p. 659.
Heparinization of Eye. M. W. Bick.—p. 663.
Preservation of Rabbit Cornea Following Exposure to Capacitron. T. D. Duane and O. S. Lee.—p. 671.
Self-Sterilizing Ophthalmic Solutions. S. D. McPherson Jr. and R. M. Wood.—p. 675.
Prevention of Infection in Eye Surgery. M. H. Post Jr.—p. 679.
Ocular Complications of Temporal Arteritis. C. Smith and P. B. Greene.—p. 685.
Chronic Serpiginous Ulcer of Cornea (Mooren's Ulcer): Etiologic and Therapeutic Considerations. J. G. Linn Jr.—p. 691.

Annals of Allergy, Minneapolis

7:301-442 (May-June) 1949. Partial Index

Mold Fungi in Etiology of Respiratory Allergic Diseases: IX. Further Studies with Mold Extracts. H. E. Prince, S. Epstein, K. D. Figley and others.—p. 301.
*Use of Antihistaminic Drugs in Human Tuberculosis: Preliminary Report. A. R. Judd and A. R. Henderson.—p. 306.
Clinical Evaluation of Neohetramine in Allergic Diseases. E. Schwartz and J. Reicher.—p. 320.
*Allergy and Tonsil Problem in Children. N. W. Clein.—p. 329.
Study of Incidence of Air-Borne Fungi in City of Rio de Janeiro. N. Passarelli, M. Pinto de Maranda and C. de Castro.—p. 334.
Sinusitis, Allergy and Bacterial Vaccine. K. A. Baird.—p. 339.
"Cerebral Edema" due to Phenobarbital Sensitivity: Clinical Study of Case. C. M. Jenkins.—p. 346.
Bacterial Allergy: Extreme Hypersensitization Commonly Found in Chronic Brucellosis. J. F. Griggs.—p. 350.
Diagnosis and Treatment of Perennial Allergic Coryza. A. L. Maietta.—p. 359.
New Antihistaminic Compound for Treatment of Urticaria and Hay Fever. S. N. Saletta.—p. 366.

Antihistaminic Drugs in Tuberculosis.—Judd and Henderson state that primary tuberculosis is characterized by relative benignity and absence of tissue destruction. These characteristics are reversed in the reinfection or secondary phase. The reversal is dependent on hypersensitivity to an antigen developed during the primary phase. On reinfection or spread of the bacilli from a primary site, there occurs an inflammatory reaction characterized by exudation. If this acute inflammation could be prevented, it seemed possible that antihistaminic drugs might protect sensitized cells from injury and thus alter the course of the disease. The drugs employed were diphenhydramine (benadryl®), tripelennamine (pyribenzamine®), phenindamine (thephorin®), and thonzylamine (neohetramine®). A total of 30 patients is presented in this preliminary report. These included cases of tuberculous pneumonia, acute exudative lesions, mixed exudative and fibrotic lesions and advanced chronic fibrotic lesions. The greatest improvement occurred in patients with tuberculous pneumonia and other acute exudative lesions, which seem to be the result of hypersensitivity. The antihistamine drugs become less effective as the lesions progress in chronicity. The clinical improvement accompanying the administration of the antihistamines strongly points to the therapeutic effectiveness of these drugs even though improvement lasted only during the administration. The combined administration of antihistaminic drugs to suppress the allergic components of the disease and of streptomycin to suppress the growth of the bacillus may be effective.

Allergy and Tonsils.—This study by Clein was initiated twenty years ago to discover whether tonsils and adenoids "grew back" because of faulty surgical technic or some unknown factor. Children whose tonsils and adenoids "grew back" following tonsillectomy and adenoidectomy were found to be those who had undiagnosed and untreated allergic disease.

When the allergic symptoms are properly treated in children who require removal of tonsils and adenoids, the incidence of regrowth of lymphoid tissue in the tonsil fossae is negligible—3 per cent compared to 27 per cent in undiagnosed, untreated allergic conditions. All children in this category should have a thorough allergic study. Symptoms of allergic disease are usually not relieved by removal of tonsils and adenoids. Early diagnosis and specific treatment are the most effective measures for symptoms due to allergic disease.

Archives of Dermatology and Syphilology, Chicago

59:595-680 (June) 1949

*Treatment of Early Syphilis with Penicillin Injection in Oil and Wax U.S.P.: Report of 153 Cases. L. Chargin, N. Sobel, C. Rein and T. Rosenthal.—p. 595.

*Scleroma: Review of Literature and First Report of Multiple Familial Occurrence in United States. P. R. Kline and E. R. Brody.—p. 606.

Mammalian Tyrosinase: Melanin Formation by Ultraviolet Irradiation. T. B. Fitzpatrick, A. B. Lerner, E. Calkins and W. H. Summerson.—p. 620.

Massive Metastasizing Meningioma Involving the Scalp. C. W. Laymon and F. T. Becker.—p. 626.

Balanitis Xerotica Obliterans: Report of Case. D. G. Welton and P. Nowlin.—p. 636.

*Roentgen Therapy for Hyperhidrosis: Observation of 122 Patients. J. Borak, J. J. Eller and W. D. Eller.—p. 644.

Persistent Multiple Herpes-Like Eruption: Response to Repeated Intradermal Injections of Smallpox Vaccine. L. E. Savitt and S. Ayres Jr.—p. 653.

Treatment of Early Syphilis.—Chargin and co-workers treated 199 ambulatory patients, 134 men and 65 women, between the ages of 16 and 68 years, with early stages of syphilis by a sixteen day schedule employing a total of 4,800,000 units of penicillin in oil and wax. Forty-six of the patients were lost from observation, and 153 were observed for eight to fourteen months. The results were compared with those of two eight day schedules employing a total of 4,800,000 units of penicillin in oil and wax. The results were outstanding in primary seronegative syphilis, approaching a satisfactory outcome for 100 per cent of the patients treated by any of the schedules under consideration. Results obtained in patients with seropositive primary syphilis were satisfactory for 92 per cent as compared to satisfactory results for 60 per cent and 86.2 per cent of those following the two eight day schedules. Results were satisfactory for 74.7 per cent of the patients with secondary syphilis, as compared to satisfactory results for 29.8 and 62.6 per cent of those following the two eight day schedules. The longer schedule gave more satisfactory results for all categories. With the sixteen day schedule the results with primary seronegative and seropositive syphilis are eminently satisfactory. The results are less striking in secondary syphilis.

Scleroma.—According to Kline and Brody, 13 of the 102 cases of scleroma reported in the United States were in native-born Americans. The authors present the first report of multiple occurrence of scleroma in the United States in one family. The patient was a woman aged 41, of foreign parentage but born in America. She complained of swelling of eight years' duration about the upper lip and nose, and of persistent coryza and tenderness in the nose. Obstruction of the nasal passage had caused some respiratory difficulty. A biopsy from a nodule on the upper lip revealed a scleroma. The patient was given a total of 1,750 r and 70 milligram hours of gamma radium to each nostril on three separate occasions. After the radiation therapy the patient was given three injections of antimony potassium tartrate intravenously and subsequently twelve injections of potassium iodide intravenously at weekly intervals. Complete healing resulted without any evidence of recurrence. The patient had two brothers who were affected with this disease. Scleroma is seldom the primary cause of death. The disease is definitely infectious and probably contagious. No definite conclusion has been reached as yet as to the degree of contagiousness. The possibility of familial transmission and contagiousness of scleroma is still in doubt. Poverty, malnutrition and lack of personal cleanliness favor development of the disease. There is an actual numerical increase in scleroma throughout the entire world.

Roentgen Therapy for Hyperhidrosis.—Borak and co-workers treated 122 patients with hyperhidrosis with roentgen rays. Seventy-six of the patients were of light complexion and blond or light eyed or both. Through a filter of at least 2 mm., and preferably 4 mm., of aluminum, a dose of 300 r in air was given, and half of this dose was added twice at intervals of ten days. This treatment was repeated in the same manner after a period of four weeks. Thus a total dose of 1,200 r in air (about 1,600 r on the skin) was administered in six sessions within a period of eight weeks. The distance between the focus and the skin was 35 cm. for the treatment of the axillas, 35 to 40 cm. for the treatment of the palms and 40 to 45 cm. for the treatment of the soles. From two to eighteen years have elapsed since the termination of treatment of each patient. Thus far, no evidence of roentgen ray injury to the skin has been observed in any of the patients. With this technic, even those with blond skin seem to tolerate the dosage well. All patients have shown pronounced improvement, which was noticed about three weeks after the first series of treatments. Results were so satisfactory for a large number of patients in this series that further treatment has not appeared necessary. In order to avoid excessive dryness of irradiated areas, treatment should be discontinued after a 75 per cent improvement has been obtained. No more than two series of treatment should be given. The absence of roentgen injury to the skin is to be attributed to the filtration. The use of unfiltered rays is the most important cause of failures in roentgen therapy of hyperhidrosis.

Archives of Neurology and Psychiatry, Chicago

61:467-598 (May) 1949

*Thymectomy in Treatment of Myasthenia Gravis: Report Based on 32 Cases. L. M. Eaton, O. T. Clagett, C. A. Good and J. R. McDonald.—p. 467.

Cysticercosis Cerebri and Its Operative Treatment. L. Stepień and J. Choróbski.—p. 499.

Scoliosis as Manifestation of Disease of Cervicothoracic Portion of the Spinal Cord. E. Boldrey, J. E. Adams and H. A. Brown.—p. 528.

Destruction of Nerve Cells by Rickettsial Organisms of Tsutsugamuchi Fever. J. W. Papez and J. F. Bateman.—p. 545.

Pial-Medullary Angiomas: Clinicopathologic Features and Treatment. R. C. Bassett, M. M. Peet and J. F. Holt.—p. 558.

Relation of Changes in Carbohydrate Metabolism to Psychotic States. H. Freeman and R. N. Zaborenke.—p. 569.

*Capillaroscopic Observations in Cases of Multiple Sclerosis. L. V. Chiavacci and T. J. Putnam.—p. 577.

Thymectomy in Myasthenia Gravis.—Eaton and associates studied the relationship between the thymus and myasthenia gravis. The great majority of patients with myasthenia gravis who had been seen before 1941 at the Mayo Clinic had had stereoscopic roentgenograms of the thorax, but the authors did not find in previous records a single instance of unequivocal diagnosis of thymic tumor. Abnormal shadows in the anterior part of the mediastinum had been detected occasionally. Clinicians had suspected that they were cast by tumors of the thymus; however, the roentgenologists had been unable to attribute them definitely to the thymus. In a study of 206 consecutive cases of myasthenia gravis since 1941, diagnosis of thymic tumors was made in 33 by roentgenologic methods. The accuracy of the roentgenologic diagnosis was verified surgically in 20 cases and at necropsy in 4. In only 1 of the 33 cases did operative intervention fail to vertify the presence of a thymic tumor. In the remaining 8 cases the roentgenologic evidence of a mass in the anterior part of the mediastinum was unequivocal, but the opportunity for verification at operation or necropsy has not arisen. The authors discuss the pertinent clinical data in the aforementioned 32 cases and cite clinical histories in 10. Proper roentgenologic technic reveals evidence of thymic tumor in approximately 15 per cent of patients with myasthenia gravis. This figure approximates closely the true incidence of thymic tumor in this disease. An analysis of the results obtained for 15 patients with myasthenia gravis and associated thymic tumor and for 17 patients without thymic tumor who underwent surgical removal of the thymus shows that 60 per cent of the patients were improved four and a half years to one-half year after the operation. Although these results are encouraging, they must not be considered conclusive evidence that thymectomy is of value in the treatment of myasthenia gravis. In certain cases a thymic tumor is present before the onset of the symptoms of myasthenia gravis. Roentgen irradiation of the thymus may be of value in the treatment. A conclusive opinion as to the value of thymectomy awaits a careful study of a larger number of cases over a longer period, and comparison of the course of the disease in patients treated surgically with the course in patients receiving medical treatment only.

Capillaroscopic Observations in Multiple Sclerosis.—Chiavacci and Putnam say that disturbances in circulation have long been described as part of the histologic picture of multiple sclerosis. Putnam attempted a systematic survey of the hypothesis that the characteristic lesions of multiple sclerosis are the result of vascular closure. Spotty areas of demyelination, with relative preservation of axis cylinders and a purely ectodermal type of repair, may be produced by experimental venous obstruction, or may be observed in conjunction with a variety of lesions which embarrass the venous return. He describes results of a search for alterations in the capillaries in the region most accessible to direct observation in the living patient, namely, the nail bed. Observations were made on 48 patients with multiple sclerosis, selected from a larger series on the grounds of certainty of diagnosis, cooperativeness and convenience. For control, 9 persons employed about the laboratory were observed. The authors found that almost all 48 patients (19 men and 29 women) showed alteration of the capillaries, consisting mainly in spasticity, sluggishness or absence of circulation and thickening of intermediate parts of the loop. The capillary observations did not correspond with the severity of the patient's clinical condition. These observations seem to point to the primary nature of vascular changes in multiple sclerosis. The authors believe that the presence of abnormalities in capillary pattern in association with neurologic signs and symptoms may prove reliable, though not infallible, evidence in favor of the diagnosis of multiple sclerosis. These investigations will be continued on a larger scale with respect to the influence of various chemical and physical agents on the capillary shape.

Archives of Surgery, Chicago

58:565-730 (May) 1949. Partial Index

More Human Attitudes in Surgical Practice: Presidential Address. H. B. Zimmermann.—p. 565.
Revascularization Following Experimental Mesenteric Vascular Occlusion. R. J. Noer and J. W. Derr.—p. 576.
Use of Portacaval Anastomosis in Portal Cirrhosis. A. C. Pattison. —p. 590.
Use of Heparin and Dicumarol in Active Treatment of Thromboembolism. J. H. Olwin.—p. 603.
*Diagnosis and Surgical Treatment of Patent Ductus Arteriosus. W. J. Potts, S. Gibson, S. Smith and W. L. Riker.—p. 612.
Repair of Defects in Ethmoid and Frontal Sinuses Resulting in Cerebrospinal Rhinorrhea. A. W. Adson and A. Uihlein.—p. 623.
*Pseudohemophilia or Chronic Thrombasthenia. C. W. McLaughlin Jr. —p. 635.
Surgical Treatment of Benign and Secondarily Malignant Tumors of Esophagus. S. W. Harrington.—p. 646.
Surgical Treatment of Carcinoma of Esophagus and Stomach. H. L. Thompson.—p. 662.
Treatment of Jejunal Ulcer: Comparative Follow-Up Study. H. K. Ransom.—p. 684.
Polyposis of the Colon. E. L. Strohl and G. V. Pontius.—p. 708.
Situs Inversus Totalis: Statistical Review of Data on 76 Cases with Special Reference to Disease of Biliary Tract. C. W. Mayo and R. G. Rice.—p. 724.

Patent Ductus Arteriosus.—Potts and co-workers operated on 52 children between the ages of 2 and 13 years with patent ductus arteriosus. A continuous murmur over the base of the heart was the outstanding important physical observation. The diagnosis was confirmed at operation in each case. Two patients had raucous systolic murmurs, which had a slight carry-over into diastole. In these 2 patients there was no patent ductus but an abnormal opening in the common wall of the aorta and the pulmonary artery just beyond their emergence from the ventricles. In the other 50 cases the size of the patent ductus varied from 4 to 12 mm., except for 1 patient who had a ductus measuring 18 mm. in diameter. Twenty ducti were ligated; 30 ducti were divided and sutured with the use of a clamp which has rows of extremely fine teeth in apposing jaws, which may lessen the danger of uncontrollable hemorrhage due to slipping clamps. Hemorrhage occurred in 4 instances and was controlled in all without much difficulty. There were no deaths. Surgical treatment is advised for all typical patent ducti in children between the ages of 2 and 12 years.

Pseudohemophilia or Chronic Thrombasthenia.—McLaughlin considers pseudohemophilia and chronic hereditary thrombasthenia as two distinct entities. Both conditions present themselves as a hemorrhagic diathesis, usually familial in type but not sex linked. Pseudohemophilia is a more clearly established condition in which the principal diagnostic feature is a persistently prolonged bleeding time. Coagulation time may be normal in pseudohemophilia and in hereditary chronic thrombasthenia, while thrombocyte count may be increased in the first condition and normal or low in the latter. Clot reaction is usually normal in pseudohemophilia and prolonged in chronic thrombasthenia. Two cases classified as instances of pseudohemophilia in male children aged 18 months and 1 year are reported. There is no specific therapy for pseudohemophilia. Continued bleeding from a deep dog bite in the cheek of one child and persistent bleeding from a small wound in the tongue of the other patient were controlled by blood transfusions and by closing the wound with deeply placed sutures tied over pieces of gelfoam.® Both patients survived. Pseudohemophilia is seldom fatal, the bleeding tendency usually becoming less pronounced with advancing years. Surgical treatment should be avoided unless absolutely required.

Blood, New York

4:697-792 (June) 1949

Chronic Congenital Aregenerative Anemia (Pure Red-Cell Anemia) Associated with Iso-Immunization by Blood Group Factor "A." C. H. Smith.—p. 697.
Mediterranean Anemia in Negro: Report of 4 Cases and Their Families. S. O. Schwartz and J. Mason.—p. 706.
Rapid Slide Test for Heterophile Antibody in Infectious Mononucleosis. W. C. Moloney and Lucy Malzone.—p. 722.
Parallel Effects of Magnesium on Complementary and Coagulative Activities of Blood Serum. F. Maltaner and J. O. de Almeida.—p. 728.
Absence of Heterophile Reaction in Spinal Fluid in Infectious Mononucleosis. H. A. Lyons and J. G. Harrison.—p. 734.
Factor in Serum which Accelerates Conversion of Prothrombin to Thrombin: II. Its Evolution with Special Reference to Influence of Conditions Which Affect Blood Coagulation. B. Alexander, A. de Vries and R. Goldstein.—p. 739.
Id.: III. Its Relationship to Coagulation Defect of Thrombocytopenic Blood. B. Alexander and A. de Vries.—p. 747.
Studies on Hemophilia: V. Coagulation Defect in Hemophilia with Particular Reference to Conversion of Prothrombin to Thrombin and Evolution of Prothrombin Conversion Accelerator. B. Alexander and A. de Vries.—p. 752.
Lymphatic Leukemia and Lymphatic Leukemoid States in Cancer of Stomach. J. Bichel.—p. 759.
Lymphocytic Leukemoid Reaction of Blood Associated with Miliary Tuberculosis. F. H. Gardner and S. R. Mettier.—p. 767.

California Medicine, San Francisco

70:445-522 (June) 1949

Approach to Some Non-Clinical Responsibilities of Medicine. E. V. Askey.—p. 445.
Surgical Treatment of Esophageal Hiatus Hernia by Transthoracic Herniotomy: Preliminary Report. R. Cohn and L. Heaton.—p. 449.
*Diagnosis and Surgical Treatment of Tetralogies. Mary B. Olney. —p. 453.
Sickle Cell Disease Simulating Advanced Rheumatoid Arthritis: Report of Case. E. L. Coodley and M. J. Kert.—p. 459.
Myelography: Diagnostic Value in Lesions of Lumbar Intervertebral Disks with Variation in Technic. C. E. Grayson and H. A. Black. —p. 464.
Differential Diagnosis of Rheumatism: Clinical Study of 500 Cases. J. J. Furlong.—p. 472.
Neck and Shoulder Pain. A. Fields and J. Hoesley.—p. 478.
The "Nursing Crisis." T. C. McVeagh.—p. 483.
Potassium Permanganate Soaks in Peripheral Vascular Diseases to Emphasize Nail Growth Changes. R. J. Popkin.—p. 485.
Food Handler's Infection (Swine Erysipelas) in Man. M. Debenham. —p. 486.

Diagnosis and Surgical Treatment of Tetralogies.—Olney presents a review of 20 cases of congenital heart disease of the cyanotic type. In 15 of these the clinical diagnosis of tetralogy of Fallot was proved surgically. In the 5 other cases in which the clinical diagnosis was questionable, operation disclosed that tetralogy was not present. The author stresses that patients with congenital heart disease of the cyanotic type may be assumed to be candidates for surgical treatment if the examination of the heart reveals murmurs characteristic of an interventricular septal defect, overriding aorta and pulmonary stenosis; if the electrocardiogram shows right axis deviation; if the roentgen or fluoroscopic study demonstrates decreased pulmonary markings, and if iodized poppyseed oil injection shows right ventricular enlargement, a septal defect, overriding of the aorta and small pulmonary arteries. In some cases some of these criteria may be missing. If there are not definite contraindications, exploratory thoracotomy is indicated for patients with congenital heart disease causing cyanosis.

Canadian Medical Association Journal, Montreal

60:549-648 (June) 1949. Partial Index

*Initial Clinical Experience with Antabuse. F. Gelbman and N. B. Epstein —p. 549.
Vitamin B_{12} in Pernicious Anemia. J. Kaufmann and A. Cooperberg. —p. 552.
Anuria. C. H. W. Weinlos and C. B. Rich.—p. 555.
Air Travel for the Incapacitated. K. E. Dowd.—p. 558.
Electronarcosis. J. J. Geoghegan.—p. 561.
Basic Principles of Pediatric Anesthesia. C. R. Stephen and H. M. Slater.—p. 566.
Alberta's Tuberculosis Program. A. H. Baker.—p. 572.
Review of Trachoma. W. B. Murray.—p. 574.
Congenital Blindness (Pseudoglioma) Occurring as Sex-Linked Developmental Anomaly. W. M. G. Wilson.—p. 580.
Primary Resection of Colon in Ulcerative Colitis. G. G. Miller, C. M. Gardner and C. B. Ripstein.—p. 584.
Diagram Illustrating Results Given by Copper Sulphate Method of Phillips, Van Slyke et al. A. Bertrand.—.p. 586.
Traumatic Rupture of the Thoracic Aorta. H. K. Fidler.—p. 590.
Surgical Treatment of Patent Ductus Arteriosus. R. Robertson.—p. 595.
Fascial Suspension of the Vagina. N. M. Guiou.—p. 600.
Protein-Bound Plasma Iodine as Aid in Diagnosis of Thyroid Disease. W. F. Perry and J. B. R. Cosgrove.—p. 602.
Production of Visceral Lesions Following Attempted Chronic Irritation of Central Nervous System. M. Schachter and R. Schachter.—p. 607.
*Death Following Ingestion of Alcohol in Antabuse Treated Patient. R. O. Jones.—p. 609.

Clinical Experience with Antabuse.—Gelbman and Epstein treated 55 patients, 46 men and 9 women, between the ages of 22 and 64, with tetraethylthiuramdisulfide (antabuse). Each patient, accompanied by a relative, close friend, social worker or member of Alcoholics Anonymous, was given a brief talk about the treatment, and then swallowed four tablets, 0.5 Gm. each. Each patient was given five tablets to take home. He was instructed to take three tablets on the following morning, two on the second morning and to report back to the Institute of Psychiatry with someone on the second afternoon for his "experience session." He was asked to bring his own alcoholic beverage. This session was held in groups of 2 to 5 patients. Each patient was allowed to drink at his usual rate. The reaction of alcohol with antabuse occurred within two to fifteen minutes, or after 2 to 6 ounces (0.06 to 0.18 liter) of liquor, or before a quart (1 liter) of beer could be consumed. Of the total of 55 patients, 45 have not reverted to their old drinking habits. The 10 "failures" include 6 persons who were not adequately followed after starting to take antabuse. To insure adequate evaluation of antabuse therapy, a social approach to include relatives, friends and Alcoholics Anonymous is necessary. A few skin rashes have been observed. One serious complication with convulsions followed by unconsciousness, hemiparesis and amnesia occurred in a diabetic patient, suggesting that antabuse may be contraindicated in persons with diabetes. The patient's first trial with alcohol, after taking antabuse, should be under controlled conditions. A minimum period of forty-eight hours of sobriety is recommended before starting on therapy with antabuse. Each patient should be checked at least once every two weeks after his controlled experience of the effects of antabuse plus alcohol. Antabuse appears to be a valuable drug in the total treatment of alcoholism. Psychotherapeutic measures remain still a necessary part of the successful treatment of alcoholism.

Death Following Antabuse-Alcohol.—Jones reports the death of a healthy man aged 29 following a reaction which resulted from his having taken 1 ounce (0.03 liter) of rum after desensitization with antabuse. The patient had received 5.5 Gm. of antabuse up until the time of taking alcohol. On the third day that he was receiving antabuse his dacryocystitis was treated surgically after induction of local anesthesia. He received one extra day's dosage of antabuse before alcohol was given to him, so that his prealcoholic dosage was 1 Gm. greater than the 4.5 Gm. customarily given. The reaction observed over the two hours following the ingestion of alcohol was moderately severe. Apparently this reaction had begun to wane, and the patient appeared to be in the sleepy stage, when, two and a half hours after the ingestion of alcohol, respiration ceased. Necropsy revealed acute congestive right-sided cardiac failure as the cause of death but gave little indication as to why this cardiac failure should have occurred. Chemical analysis of the blood revealed an extremely high level of acetic aldehyde, which may have been responsible for the cardiac failure. Treatment of alcoholism with antabuse is far from being free from danger. It should be carried out only in the hospital with exceedingly small doses of both the drug and alcohol and with all the facilities at hand for emergency resuscitation. The patient must be carefully observed for a number of hours after the acute reaction. It would seem to be unsafe to administer this drug on an outpatient basis.

Cincinnati Journal of Medicine

30:243-298 (May) 1949

Surgical Problem of Recurrent and Uncontrolled Cancer of Female Genitalia After Previous Irradiation and Conservative Surgery. A. Brunschwig.—p. 243.
Failure of Beef Spleen Extracts to Influence Course of Carcinoma. J. L. DeCourcy.—p. 246.
Hormonal Control of Menstrual Cycle—Application of Physiologic Concepts to Therapy. V. M. Esselborn.—p. 248.

30:299-355 (June) 1949. Partial Index

Alveolectomy. K. Tschiassny.—p. 299.
Early Treatment of Stroke. C. D. Aring.—p. 304.

Geriatrics, Minneapolis

4:127-204 (May-June) 1949. Partial Index

Orientation of Geriatrics. E. J. Stieglitz.—p. 127.
Hyperthyroidism in the Aged: Review of 100 Cases Over 60 Years of Age. L. Seed and A. M. Lindsay.—p. 136.
Health Outlook for Older People. G. Mark.—p. 146.
Study of Electrocardiogram in Persons Over Seventy. R. J. McNamara. —p. 150.
Problems in Gastrointestinal Surgery as Affected by Advanced Age. J. T. Reynolds.—p. 161.
Psychometric Evaluation of Aged White Males. E. J. Chesrow, P. H. Wosika and A. H. Reinitz.—p. 169.

Indiana State Medical Assn. Journal, Indianapolis

42:495-582 (June) 1949

Intussusception in Adults: Report of 4 Cases. W. C. Moore, H. C. Marsh and C. E. Rush.—p. 507.
Obstetrical Hemorrhage. D. N. Danforth.—p. 512.
*Tetraethyl Ammonium Chloride and Its Use in Peripheral Vascular Diseases. J. L. Eisaman and J. Chrispin.—p. 517.
Complications in Treatment of Incarcerated Hernia with Vasodilatant Drug: Case Report. T. L. Grisell.—p. 522.
Management of Omphalocele, or Exomphalos: Report of Case. T. D. Carpenter and B. K. Zaring.—p. 525.

Tetraethylammonium Chloride in Vascular Diseases.—Eisaman and Chrispin review the pharmacology of tetraethylammonium chloride and describe its effects on over 100 patients with peripheral vascular disease. Seven illustrative case histories are presented. The ability of tetraethylammonium chloride to relieve symptomatically the effects of circulatory insufficiency is remarkable. Rest pain from thromboangiitis obliterans (Buerger's disease), claudication pain from thromboangiitis or arteriosclerosis obliterans and causalgic pain, including the pain and swelling of reflex sympathetic dystrophies and osteoporosis due to trauma, may be relieved. It is helpful in cases in which the use of tobacco is stopped on account of thromboangiitis obliterans. The drug is a useful substitute for lumbar paravertebral sympathetic block in cases of mild thrombophlebitis. The drug has been used in several cases of hypertension with great reduction in systolic and diastolic pressures. This compound may be of some value in determining the suitability for sympathectomy of patients with hypertension. In a few cases the drug did not lower the blood pressure (evidently because of humoral effects). However, even in those hypertensive patients in whom blood pressure is not lowered, relief of headaches and associated symptoms is usually obtained. In 1 patient in whom two ophthalmologists had assumed that eyesight was lost, vision was restored by daily injections of tetraethylammonium chloride. The authors stress that the patient must remain recumbent for at least thirty minutes after intravenous injection of the drug.

Journal of Experimental Medicine, New York

89:561-720 (June) 1949. Partial Index

Virus Recovered from Feces of "Poliomyelitis" Patients Pathogenic for Suckling Mice. G. Dalldorf, Grace M. Sickles, Hildegard Plager and Rebecca *Gifford.—p. 567.*

Quantitative Air-Borne Tuberculosis in Rabbit: Course of Human Type Infection. A. G. Heppleston.—p. 597.

Effect of Alloxan Diabetes on Experimental Cholesterol Atherosclerosis in Rabbit: I. Inhibition of Experimental Cholesterol Atherosclerosis in Alloxan Diabetes: II. Effect of Alloxan Diabetes on Retrogression of Experimental Cholesterol Atherosclerosis. G. L. Duff and G. C. McMillan.—p. 611.

Effect of Proteinuria on Kidney: Proteinuria, Renal Enlargement, and Renal Injury Consequent on Protracted Parenteral Administration of Protein Solution in Rats. J. H. Baxter and G. C. Cotzias.—p. 643.

Serologic Studies in Rheumatic Fever: I. "Phase" Reaction and Detection of Autoantibodies in the Rheumatic State. E. E. Fischel and Ruth H. Pauli.—p. 669.

Cytology of Rickettsiae. H. Ris and J. P. Fox.—p. 681.

Induction of Cardiac Lesions, Closely Resembling Those of Rheumatic Fever, in Rabbits Following Repeated Skin Infections with Group A Streptococci. G. E. Murphy and H. F. Swift.—p. 687.

Structure of Elastic Tissue as Studied with Electron Microscope. J. Gross. —p. 699.

Journal of Lab. and Clinical Medicine, St. Louis

34:733-882 (June) 1949

Cultivation of Mycobacterium Tuberculosis: Comparison of Hydrochloric Acid and Trisodium Phosphate in Preparation of Sputum and of Use of Fluid Dubos-Davis Medium and Petragnani Medium. M. Beattie. —p. 733.

Bacteriophage Typing of Salmonella Typhi: Report of Typing in Michigan, 1947-1948. N. D. Henderson and W. W. Ferguson.—p. 739.

Formation of Antibodies in Human Subjects After Ingestion of Heat-Killed Brucella Abortus. A. I. Braude, D. Gold and D. Anderson. —p. 744.

*Laboratory and Clinical Observations on Aerosporin (Polymyxin B). E. Jawetz and V. R. Coleman.—p. 751.

Coagulation Defect in Thrombocytopenic Purpura. A. J. Quick, J. N. Shanberge and M. Stefanini.—p. 761.

Developing (Coombs) Test in Spherocytic Hemolytic Anemias: Its Significance for Pathophysiology of Spherocytosis and Splenic Hemolysis. K. Singer and A. G. Motulsky.—p. 768.

Hypertension During Blood Transfusions for Hemorrhagic Shock in Patient with Unilateral Renal Ischemia. E. L. DeGowin.—p. 784.

Effect of Heparin and Dicumarol in Increasing Coronary Flow Volume. N. C. Gilbert and L. A. Nalefski.—p. 797.

One-Stage and Two-Stage Prothrombin Methods in Control of Dicumarol Therapy, with Remarks on Ac-Globulin. J. H. Olwin.—p. 806.

Causes for Rejections of Blood Donors: Statistical Study. C. M. Zukerman—p. 814.

Distribution of Emetine in Tissues. L. G. Parmer and C. W. Cottrill. —p. 818.

Spectrophotometric Method for Determination of Procaine and p-Aminobenzoic Acid. K. S. Ting, J. M. Coon and A. C. Conway.—p. 822.

Kepler Water Test in Tabes Dorsalis. F. Diez-Rivas.—p. 830.

Effect of Hyaluronidase on Hematocrit and Plasma Proteins of Albino Rat. S. K. Elster, M. E. Freeman and P. R. Anderson.—p. 834.

Minimum Tryptophane Requirement and Urinary Excretion of Tryptophane by Normal Adults. C. W. Denko and W. E. Grundy.—p. 839.

Alcohol and Pancreatitis: Serum Amylase Determinations in Normal Individuals Following Ingestion of Alcohol. J. Myhre and S. Nesbitt. —p. 844.

Studies on Depression of Brain Oxidations: I. Biopsy Technic and Analysis of Variance in Selection of a Pentobarbital Concentration. D. S. Wilkins, R. M. *Featherstone, C. E. Gray and others.—p. 846.*

Studies on Serum Esterase: Serum Esterase in Liver Disease. M. G. Goldner and M. Morse.—p. 858.

Observations on Aerosporin (Polymyxin B).—Jawetz and Coleman say that aerosporin (polymyxin B) is a stable peptide derived from Bacillus polymyxa with antibacterial action against many gram-negative organisms. Among bacteria commonly isolated from infections of the urinary tract, Escherichia coli and Aerobacter aerogenes were inhibited in vitro by less than 1 microgram of the drug per cubic centimeter, but many strains of Proteus and Pseudomonas were more resistant. Resistance could be induced in susceptible bacterial strains only with difficulty. The action of the antibiotic in vitro appeared to be bactericidal rather than bacteriostatic. Multiple intramuscular injections of the drug resulted in cumulative serum levels. The serum levels were greatly increased in the presence of elevated nonprotein nitrogen of the blood. In patients with chronic infection of the urinary tract, administration of polymyxin B for three to four days eliminated susceptible bacteria from the urine and controlled symptoms. However, the short course of treatment was followed by a bacteriologic relapse within one to three weeks in all cases. Prolonged treatment with the drug was not feasible because of toxic symptoms affecting particularly the nervous system. In its present form polymyxin B *is not suitable* for general clinical application.

Journal of Pediatrics, St. Louis

34:663-812 (June) 1949

Fibrosis of Pancreas in Infants and Children: Illustrated Review of Certain Clinical Features with Special Emphasis on Pulmonary and Cardiac Aspects. C. D. May and C. U. Lowe.—p. 663.

Injuries in Childhood. C. R. Hanlon, J. B. Butchart and P. R. Kempf. —p. 688.

Serotherapy in Pertussis. E. H. Place, M. J. Keller and E. W. Shaw. —p. 699.

Epidemic Diarrhea of Newborn Infant. J. G. Cumming.—p. 711.

Botulism and Tick Paralysis: Differential Diagnosis of Acute Bulbar Poliomyelitis. D. B. Rice.—p. 716.

Roentgen Manifestations of Infantile Hypertrophic Pyloric Stenosis. H. M. Olnick and H. S. Weens.—p. 720.

Precocious Puberty. L. W. Mason.—p. 730.

Method of Determination of Serum *p*H Applicable for Clinical Use. W. M. Kelsey and L. B. Leinbach.—p. 741.

*Effect of Terminal Disinfection and Other Factors on Stability of Ascorbic Acid in Reliquefied Milk Products Used in Infant Feeding. D. G. Keeney, L. S. Baur and O. F. Garrett.—p. 745.

Stability of Ascorbic Acid in Reliquefied Milk.—The dried milk product studied by Keeney and associates was one of the products designed especially for infant feeding. The composition of this product is 13.75 per cent protein, 26.85 per cent fat, 52.90 per cent lactose, 4.50 per cent ash and 2.0 per cent moisture. All samples used in this study were fortified with synthetic crystalline ascorbic acid, the vitamin being added to the liquid product prior to the drying process. The batches of powder had been made in regular commercial operation by the spray-drying process. Consequently, the results should be fairly representative of those with the commercial product. In the reliquefying process ¼ pound (0.11 Kg.) of powder was made up to 1 quart (0.95 liter) of liquid with warm water. The authors found that loss of ascorbic acid in the dry powder contained in the open can is negligible during the first four days. Reliquefied formulas made from dried milk products containing approximately 75 mg. of total ascorbic acid per quart, and prepared in the conventional manner without heating, lose approximately 11 per cent (about 8 mg.) of their total ascorbic acid content during twenty-four hours of storage under ordinary home refrigeration. Terminally disinfected formulas (originally containing about 75 mg. total ascorbic acid per quart) which have been rapidly cooled before being put under refrigeration lose approximately 15 to 20 per cent (about 11 to 15 mg.) of their total ascorbic acid content during the combined heating and storage period of twenty-four hours. Terminally disinfected formulas allowed to cool slowly lose slightly more of their total ascorbic acid content than if cooled rapidly. Terminal disinfection of the formula by the fast heating high temperature procedure is to be preferred with respect to the stability of ascorbic acid. Warming the refrigerated formula quickly to body temperature just prior to feeding does not increase the loss of ascorbic acid. Exposure of the reliquefied product to light for extended periods of time accelerates the loss of ascorbic acid and is to be avoided. Iron and chlorine in the amounts normally present in treated city waters have no significant effect on the stability of the ascorbic acid in the formulas. Boiling the water subsequently to be used in making up the formulas in copper vessels is not desirable, because copper accelerates the loss of ascorbic acid.

Laryngoscope, St. Louis

59:441-564 (May) 1949. Partial Index

*Poliomyelitis-Tonsillectomy Survey—1948. D. S. Cunning.—p. 441.

Ventilation Paracentesis for Relief of Stubborn Eustachian Tube Blockage. J. G. McLaurin.—p. 482.

Subcutaneous Rupture of Trachea from Larynx by External Trauma; with Stenosis and Recovery. B. R. Dysart.—p. 502.

Scleroma of Larynx, Trachea and Bronchi. A. H. Miller.—p. 506.

Fenestration Operation: Indications, Technic and Results. J. B. Farrior. —p. 515.

Bacterial Allergy and Importance of Otolaryngological Procedures. O. C. Hansen-Pruss.—p. 540.

Poliomyelitis and Tonsillectomy Survey, 1948.—Cunning has been compiling statistics since 1946 to determine whether a causal relationship exists between tonsillectomies and poliomyelitis. The surveys conducted in 1946 and 1947 did not justify the conclusion that a causal relationship existed. Of 2,290 poliomyelitis cases tabulated in 1946, there were histories of recent tonsillectomies in 56, or 2.5 per cent. In the following year (1947) 4,331 cases were reported, 24, or 0.55 per cent, with previous tonsillectomies. During the 1948 epidemic of poliomyelitis the United States Public Health Service reported 27,894 cases. Statistics could be compiled on 10,624 of these. There were 1,481 cases of the bulbar type of poliomyelitis, 27 of them (1.7 per cent) preceded by tonsillectomies. Of the 5,859 cases listed as the spinal type, there were histories of tonsillectomies in 8 (0.13 per cent). In the 3,284 cases recorded as mild, there were 4 (0.12 per cent) with recent tonsillectomies. All tonsillectomies had been performed one to thirty days prior to the onset of poliomyelitis. The author is of the opinion that no definite causal relationship has been established between tonsillectomy and poliomyelitis. He does not believe that tonsillectomy should be postponed indefinitely simply because the summer months are the months during which poliomyelitis is prevalent. However, if there is a rise in the poliomyelitis rate, bordering on epidemic proportions, all elective surgical operations should be postponed.

Medicine, Baltimore

28:143-238 (May) 1949

*Etiology of Rheumatic Fever: Review of Theories and Evidence. B. H. Waksman.—p. 143.
*Pulmonary Insufficiency: III. Study of 122 Cases of Chronic Pulmonary Emphysema. E. deF. Baldwin, A. Cournand and D. W. Richards Jr. —p. 201.

Etiologic Basis of Rheumatic Fever.—Since most reviews on rheumatic fever deal with work carried on in circumscribed areas or over limited periods, Waksman believes that there is a need for a review tracing the main currents of thought concerning the etiologic basis of this disease. The present review is an attempt to fill this need. Susceptibility to rheumatic fever is a hereditary factor, though the same pathologic process seems to take place to a limited extent in many normal persons. The frequency with which susceptible persons contract rheumatic fever, the so-called penetrance, is influenced both by internal factors such as sex, age, pregnancy, diabetes and thyroid disease, and perhaps others as yet undetermined, and by external factors such as climate and diet. Pathologic similarities and overlapping hereditary factors and incidence suggest similar defects in rheumatic fever, rheumatoid arthritis, periarteritis nodosa and glomerulonephritis. This suggestion is confirmed by the simultaneous production in one animal of what appear to be two or even three of these diseases by one experimental technic. Rheumatic patients show a decided nonspecific hyperirritability to most stimuli. Attacks of rheumatic fever are usually precipitated by streptococcic infections of the throat, though trauma, cold and fatigue may also initiate attacks. The process set in motion by these various events is not known; it may be the adaptation syndrome of Selye, a nonspecific allergic response, an increasing titer of autoantibodies against some constituent of connective tissue or even the reactivation of a latent virus infection. The second and third of these alternatives are strongly supported by observations. The clinical pattern of rheumatic fever may depend on such factors as trauma, environment, previous rheumatic history and conceivably nervous reflex patterns.

Pulmonary Insufficiency.—In this paper, the third of a series dealing with pulmonary insufficiency, Baldwin and associates discuss various types of pulmonary dysfunction observed in chronic pulmonary emphysema. They propose a physiologic classification of chronic pulmonary emphysema in which cases with pulmonary insufficiency and those with cardiopulmonary insufficiency are considered separately. The severity of pulmonary insufficiency was judged from the reduction of the arterial oxygen saturation and from the increase in carbon dioxide tension following a standard exercise test. They differentiate 4 groups. In group 1 severe impairment of the ventilatory function and moderate disturbance of intrapulmonary air distribution are present. Hyperventilation, however, adequately compensates for the disturbance of distribution, thus maintaining an adequate alveolar ventilation with normal respiratory exchange and preventing the development of arterial anoxia. The major disability of this group, therefore, is the reduction in breathing reserve, which limits physical activity and causes dyspnea. In group 2 impairment of the ventilatory function and greater disturbance of air distribution appear. Although hyperventilation still maintains a relatively normal arterial carbon dioxide tension, the compensation is not sufficient to prevent arterial anoxia at rest and following exercise. To the reduction in breathing reserve another major disability is thus added, namely, alveolar respiratory insufficiency. In group 3 the reduction of ventilatory function and the disturbance in air distribution are both severe. Compensatory hyperventilation during exercise and early recovery is not possible, because of the limitation of the ventilatory capacity. This adds to the inadequacy of the alveolar ventilation as a cause of the arterial carbon dioxide retention and arterial anoxia. This group suffers from profound ventilatory and alveolar respiratory insufficiency. In group 4 a ventilatory and an alveolar respiratory insufficiency nearly as severe as that in group 3 is associated with evidence of polycythemia and chronic congestive heart failure. Hypoventilation during all the periods of observation in the presence of a high arterial carbon dioxide tension and acidosis and a low oxygen saturation are striking features of this group. They reveal a profound disturbance in the response of the respiratory centers to normal stimuli. Cases, some of them with autopsy observations, have been described in order to illustrate further the characteristic patterns of pulmonary dysfunction.

Michigan State Medical Society Journal, Lansing

48:521-648 (May) 1949

Diphtheria in the City of Detroit. J. G. Molner, B. H. Douglas and H. A. Raskin.—p. 561.
Why "Insanity" Hearings Are Voided by the Court: Suggestions Regarding Physicians' Certificates of Insanity. R. A. Morter.—p. 574.
Ovarian Pregnancy. M. G. Fee and J. W. Thompson.—p. 577.
The Anxiety State from the Layman's Viewpoint. R. C. Moehlig. —p. 579.
Bronchiectasis: Report of 100 Cases. N. Levitt.—p. 585.
Postoperative Ileostomy Management: Simplified Technic. E. T. Thieme and W. D. Cheney.—p. 590.
Electrocardiographic Changes in Patients Receiving Tetraethylammonium Chloride Intravenously. R. W. Monto and J. W. Keyes.—p. 593.
Histoplasmosis. P. A. Van Pernis.—p. 597.
Nodular Diseases of Extremities. A. R. Woodburne and O. S. Philpott.—p. 600.

Military Surgeon, Washington, D. C.

104:415-498 (June) 1949. Partial Index

Airborne Medical Service. R. C. Hunter Jr.—p. 427.
Frozen Foods in the Tropics. S. C. Smock.—p. 431.
Biochemical Research at the Army Medical Department Research and Graduate School. M. E. Freeman.—p. 434.
Hospital Administration Courses in the United States Army. J. T. Richards.—p. 437.
Educational Program of the Army Nurse Corps. Augusta Short.—p. 442.
Rapid Test for Serum Protein Alterations. E. E. Mandel.—p. 456.
Uses and Abuses of Streptomycin in Thoracic Surgery. L. M. Shefts. —p. 461.
Experience with Spinal Anesthesia in Obstetrics. G. A. Bourgeois and N. Herzig.—p. 464.
Ringworm Therapy: Fungicidal Skin Varnish. S. Vernon.—p. 470.

New England Journal of Medicine, Boston

240:825-862 (May 26) 1949

The Shattuck Lecture: La Médecine du Coeur. P. D. White.—p. 825.
*Treatment and Prophylaxis of Pulmonary Embolism by Vein Interruption. M. L. Connerley and J. H. L. Heintzelman.—p. 830.
Splenic-Vein Thrombosis Following Transthoracic Gastrectomy and Incidental Splenectomy. S. Quan and B. Castleman.—p. 835.
Obstetrics in Winchester Hospital (1928-1947). S. H. Moses.—p. 838.
Abdominal Surgery. A. W. Allen and C. E. Welch.—p. 841.
Oat-Cell Carcinoma of Left Main Bronchus, with Metastases to Brain, Liver, Adrenal Gland and Lymph Nodes.—p. 849.
Adenocarcinoma of Left-Upper-Lobe Bronchus.—p. 851.

Interruption of Veins for Pulmonary Embolism.—Connerley and Heintzelman performed surgical interruptions of veins in 67 patients with thrombophlebitis or phlebothrombosis during the period 1945 to 1948. Of these, 51 were bilateral femoral vein divisions, 6 were a combination of right-common-iliac and left-common-femoral divisions and 10 were divisions of the inferior vena cava. Both thrombophlebitis and phlebothrombosis may give rise to pulmonary embolism. Division of veins was performed immediately on the discovery of the presence of one or more of the symptoms and signs of thrombophlebitis which usually appear prior to pulmonary embolism. Some amount of swelling of the lower extremity occurred postoperatively in all patients. The edema was transitory, never of over four weeks' duration except in 2 patients, both of whom had superficial interruption of the femoral vein. Complete remission of all swelling resulted from bilateral lumbar sympathetic neurectomy in the 2 patients. Recurrent thrombophlebitis appeared postoperatively in all patients, but these cycles were usually limited to two or three episodes of three to five days each. They can be reduced to a minimum by graded exercises without postphlebitic syndromes in most patients. There were 2 postoperative deaths which must be accredited to interruption of the vein. They do not disprove the efficacy of this form of treatment and prophylaxis of pulmonary embolism. Surgical interruption of selected veins can be accomplished with an insignificant mortality without the danger of massive delayed hemorrhage and the numerous critical laboratory observations required when anticoagulants are administered.

New York State Journal of Medicine, New York

49:1233-1360 (June 1) 1949

Alzheimer's Disease with Case Report. H. R. Brodman and J. H. Friedlander.—p. 1275.
Neurology—Undergraduate Teaching and Clinical Practice. W. D. Ayer.—p. 1281.
Scopolamine in Vertigo. L. Wirth.—p. 1285.
Placenta Previa: Twelve-Year Study. M. J. Goodfriend, M. Daniel and A. Charlton.—p. 1286.
Radiologic Study of Mastoid Bone in Infants in Conjunction with Anatomic and Pathologic Investigations. H. G. Koiransky, I. K. Ettman and E. L. White.—p. 1291.
Combined Resection of Lung and Parietal Pleura in Treatment of Pulmonary Suppuration and Empyema. M. S. Lloyd and E. A. Naclerio.—p. 1293.
Complications of Peritoneal Button Operation for Ascites. M. Goldfischer, A. Kantrowitz, S. Kornblum and A. H. Glick.—p. 1297.
Habitus in Tuberculosis. J. W. Goldzieher, S. Bassin and S. T. Goldzieher.—p. 1300.
Relative Value of Standard and Unipolar Leads in Diagnosis of Myocardial Damage. S. H. Rinzler.—p. 1303.
Protamine Edema in Diabetes Mellitus: Preliminary Report. M. Ant.—p. 1306.
Psychosomatic Status—Gastroduodenal Ulcer and Vagotomy. A. O. Wilensky.—p. 1308.
Acute Generalized Peritonitis Due to Spontaneous Rupture of Pyosalpinx. G. H. Romberg.—p. 1311.
The "Medical" Treatment of Pilonidal Disease. H. Berger.—p. 1313.
Papaverine in Epilepsy. H. I. Russek and B. L. Zohman.—p. 1315.
Addition of Niacin to Procaine Hydrochloride for Intravenous Administration: Preliminary Report. D. J. Graubard, E. Neuwirth and J. Kovacs.—p. 1317.
Cardiac Neurosis. R. Seidenberg.—p. 1319.
Gastrostomy Technic Adapted to the Contracted Stomach. S. Leo.—p. 1321.

Ohio State Medical Journal, Columbus

45:537-664 (June) 1949

Cases Illustrating Some Causes for Failure in Management of Patients with Allergy. M. B. Cohen and L. E. Abram.—p. 561.
Use of Histamine in Bell's Palsy. D. A. Skinner.—p. 565.
*Acute Dermatitis and Pneumonitis in Beryllium Workers: Review of 406 Cases in Eight-Year Period with Follow-Up on Recoveries. J. M. DeNardi, H. S. Van Ordstrand and M. B. Carnody.—p. 567.
Trichinosis—Preventable Disease. D. F. Leach and H. B. Ashworth.—p. 576.
Ionizing Radiations. R. H. Wilson.—p. 579.
Hypoplastic Anemia in Patient Treated Unfavorably with Tridione: Case Report. J. C. Smith, R. W. Heinle and O. P. Kimball.—p. 582.
Progress of Anesthesiology in Ohio. K. C. McCarthy.—p. 585.

Acute Dermatitis and Pneumonitis in Beryllium Workers.—DeNardi and associates call attention to acute dermal and respiratory manifestations occurring among workers in plants producing beryllium and its compounds. From 1940 through July 1, 1948, 406 cases have been encountered in three plants extracting beryllium from the ore beryl in the Cleveland area. Dermatologic manifestations occurred in 195 cases, and 211 patients had major respiratory manifestations. The cutaneous manifestations may appear as contact or hypersensitivity-like dermatitis, as urticarial or hyperemic lesions, discrete papular lesions, papulovesicular lesions or beryllium ulcers, which are small abrasions of the skin in which minute crystals of beryllium fluoride or beryllium sulfate tetrahydrate become embedded. Treatment includes incision of the papule, removal of the crystals in the acute ulcers and curettage of the fibrous base. Healing by second intention is complete within seven to fourteen days. Of the 211 patients with major respiratory difficulties, 121 had tracheobronchitis and 90 had chemical pneumonitis. Chemical nasopharyngitis usually preceded tracheobronchitis and pneumonitis, but frequently it also occurred independently. It was not usually disabling. There were two main types of pneumonitis. The fulminating type is the least common, and usually is associated with exposure to fumes of anhydrous beryllium sulfate formed during violent chemothermal reaction in the treatment of pulverized beryl ore fritted with sulfuric acid. Symptoms may appear within a few hours and comprise spasmodic cough, tightness of the chest with substernal pain, severe exertional dyspnea and in the severe cases varying degrees of cyanosis. The insidious type of pneumonitis usually follows prolonged exposure to the fumes or dusts of beryllium sulfate tetrahydrate, beryllium fluoride and beryllium oxide and probably results from cumulative irritation of the bronchioles by small amounts of the compounds. Subjective symptoms are: dyspnea on mild exertion, spasmodic cough aggravated in the supine position and substernal burning pressure or pain with tightness of the chest, general weakness and anorexia with weight loss. Hospitalization and the intermittent use of oxygen are required in treatment of both types of pneumonitis. There were 10 deaths in the 90 cases of pneumonitis. Recent reexamination of 20 patients who had the severe type of pneumonitis revealed no recurrent or chronic manifestation of the disease and no resultant disability.

Pennsylvania Medical Journal, Harrisburg

52:793-904 (May) 1949

Experiences and Results in Total Perineal Prostatectomy for Carcinoma of Prostate. G. G. Smith.—p. 817.
Surgical Treatment of Hyperthyroidism. H. L. Foss.—p. 822.
Future of Cesarean Section. C. Bachman.—p. 825.
Geriatrics. R. R. Snowden.—p. 828.
Experimental Background of Recent Attempts at Chemotherapy of Cancer. S. P. Reimann and E. T. Nishimura.—p. 832.
Eruptions of the Hands. F. M. Jacob and W. Guy Jr.—p. 837.
Sulfonamides in Pediatrics. R. R. Macdonald.—p. 842.
Treatment of Dendritic Keratitis. J. H. Delaney.—p. 845.

Psychiatric Quarterly, Utica, N. Y.

23:1-202 (Jan.) 1949. Partial Index

Lying: Inquiry into Ethics of Neurotic and Psychopathic Behavior. B. Karpman.—p. 1.
*Review of 27 Prefrontal Lobotomy Patients. H. B. Snow.—p. 26.
Structure and Dynamics of Supervision in Psychiatric Training. E. Stainbrook.—p. 35.
Difference in Degree of Suggestibility Between Schizophrenic, Psychoneurotic and Normal Subjects in Reproduction of Visual Forms. L. Arcieri.—p. 41.
Trauma of Bearing. N. Fodor.—p. 59.
Schizophrenia: Diencephalic Syndrome. S. Major.—p. 83.
Use of Curare (Intocostrin) in Electric Shock Therapy. R. J. Young.—p. 92.
Psychopathological Classification of Schizophrenia. D. P. Ausubel.—p. 127.
Electric and Metrazol Shock Treatment Despite Physical Contraindications. H. J. Kleinschmidt, J. S. A. Miller, M. H. Orens and L. Cohen.—p. 145.

Prefrontal Lobotomy.—Snow reviews the clinical results obtained in 27 patients who were subjected to prefrontal lobotomy. Sixteen patients derived benefit from the surgical operation. Eight of these 16 could go home, and the other 8 could work about the ward. Eleven patients were not benefited. The author does not advocate the operation as a routine measure for acute psychosis. All other forms of therapy, plus a reasonable length of time, should be given before this heroic type of treatment is attempted. It is of value in the chronic cases of long standing—for the forgotten persons in psychiatric therapy. With the use of prefrontal lobotomy one can look forward to saving a moderate percentage from the camisole, restraint sheet or seclusion room. Many of these persons can again enjoy social relationships even though they retain some of their psychotic manifestations.

South Carolina Medical Assn. Journal, Florence

45:147-172 (May) 1949

The Purpuric State. R. Wilson Jr.—p. 147.
Hyperparathyroidism: Report of Case. W. C. Herbert Jr., W. R. McLawhorn Jr. and P. J. Moore Jr.—p. 151.
Modern Psychiatry in General Practice. L. M. Dub.—p. 152.
General Practitioner in Rural Practice. A. W. Browning.—p. 155.

45:173-202 (June) 1949

Training of the Young Doctor. R. B. Durham.—p. 173.
Multiple Myeloma. H. Smith Jr.—p. 175.
Voluntary Cooperative Effort. A. L. M. Wiggins.—p. 178.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Heart Journal, London

11:205-304 (July) 1949

Hypertensive and Ischaemic Heart Disease: Comparative Clinical and Pathologic Study. C. V. Harrison and P. Wood.—p. 205.
Sino-Auricular Block, Interference Dissociation, and Different Recovery Rates of Excitation in Bundle Branches. H. B. Burchell.—p. 230.
Electrocardiographic Studies in Cretins. B. Schlesinger and B. Landtman. —p. 237.
Effects of Thiocyanate on Basal and Supplemental Blood Pressures. K. S. Alstad.—p. 249.
Radiokymography in Patent Ductus Arteriosus. K. S. Smith and F. G. Wood.—p. 257.
*Mass Miniature Radiography in Detection of Heart Disease. A. Maclean and A. Rogen.—p. 264.
Electrocardiogram of Posterior Cardiac Infarction. P. Meyer.—p. 271.
Transposition of Aorta and Pulmonary Artery Demonstrated by Angiocardiography. J. F. Goodwin, R. Steiner and E. J. Wayne.—p. 279.
Results of Medical and Surgical Treatment of Essential Hypertension. M. A. Keith, B. Woolf and A. R. Gilchrist.—p. 287.

Mass Miniature Radiography and Heart Disease.—Maclean and Rogen say that the primary intention of the Mass Radiography Unit of Glasgow was the early detection of tuberculous lung disease, although it was realized that nontuberculous conditions and notably heart disease would come within its sphere. The experienced eye could detect enlargement of the cardiac shadow in the miniature film. Varying shades of increased density of the cardiovascular shadow could also be noted. Accordingly, it became the rule to offer clinical examination to any person found to have an abnormality of the cardiac shadow. Prominence of the pulmonary artery shadow frequently did not indicate clinical heart disease. Questions were asked to bring out a history of a previous rheumatic infection or of other illness significant in the causation of heart disease. On the basis of the experience during the first year of mass radiography it was decided that the following groups should be recalled for clinical examination: (1) patients with a history of rheumatic fever, chorea or other illness suggestive of acute rheumatism; (2) those with a history of heart disease, and (3) those with abnormality of the cardiovascular shadow in the miniature roentgenogram. A history of one attack of rheumatic fever was associated with organic heart disease in only 1 in 5 cases; two or more attacks resulted in clinical evidence of disease in less than half the patients giving such a history. This is a low incidence, but it must be realized that no strict check could be made on the accuracy of the history of rheumatic fever; many comparatively minor febrile illnesses masquerade under this heading. One attack of chorea resulted in organic heart disease slightly more often than did one attack of rheumatic fever. Patients with a history of previous rheumatic infection and found to have heart disease usually had known it. Radiologic cardiac enlargement was associated with organic heart disease in 93 of 516 patients in whom this roentgenologic observation was reported. No evidence of disease was found in 340 of 529 patients who believed that they had heart disease (64 per cent). Organic valvular disease was diagnosed for the first time in only 21 cases in 34,918 routine roentgen examinations of the chest.

British Journal of Urology, London

21:101-188 (June) 1949

*Total Cystectomy: Consideration of Technic. T. Millin and F. Masina. —p. 108.
Parenchymal Carcinoma of Kidney. I. H. Griffiths and A. C. Thackray. —p. 128.
Unusual Examples of Urethrocele and Ureterocele: Operative Cure. A. W. Adams.—p. 152.
Case of Ureterocele Complicated by Renal and Ureteric Calculi. A. N. McCrea.—p. 157.
Ureterovesical Calculus. J. K. Monro.—p. 161.

Total Cystectomy.—Millin and Masina feel that the exact place of radical surgery in the treatment of malignant disease of the bladder has not been determined as yet, but with modern technic and ancillary aids the operation of extirpation of the bladder and its immediate lymphatic nodes carries no prohibitive mortality. The authors present an operative technic of total cystectomy based on sound anatomicopathologic principles. The method has been evolved after a combined experience with a variety of methods in more than 100 cases. The technic described is that of descending abdominal cystectomy. The authors do not claim that any technical finality has been achieved but suggest that the method represents an advance on any previously described.

British Medical Journal, London

1:1063-1104 (June 18) 1949

Spleen and Splenectomy. R. B. Scott.—p. 1063.
Operation for Treatment of Stress Incontinence. W. Shaw.—p. 1070.
Steatorrhea and Glossitis After Ileocolostomy: Effect of Synthetic Vitamins of B Complex, Autolysed Yeast, and Liver Extract. A. Brown. —p. 1073.
Prognosis of Certain Hysterical Symptoms. A. B. Carter.—p. 1076.
Nutritional Macrocytic Anemia in Temperate Zones. J. Rubie and C. D. Calnan.—p. 1079.
Streptomycin in Finger Infections. J. B. Watson, E. R. Griffiths and L. W. Plewes.—p. 1081.

1:1105-1150 (June 25) 1949

Mind of Mechanical Man. G. Jefferson.—p. 1105.
Use in Children of Procaine Penicillin with Aluminium Monostearate. J. L. Emery, L. M. Rose, S. M. Stewart and E. J. Wayne.—p. 1110.
Injuries to Superior Longitudinal Sinus. G. B. Barker.—p. 1113.
*Case of Bilateral Pheochromocytoma. T. M. Reid and R. Salm.—p. 1116.
Spontaneous Circumrenal Hematoma: Review and Report of 2 Cases. K. W. Martin.—p. 1118.
Aplastic Anemia Following Neoarsphenamine. F. D. Hart and J. G. Humble.—p. 1120.
Histamine Headache. M. Eszenyi-Halasy.—p. 1121.

Bilateral Pheochromocytoma.—The patient, a woman aged 40, had complained of generalized throbbing headaches for ten years. These had increased in severity during the previous two years. On the basis of the history and the results of roentgen examinations a presumptive diagnosis of chromaffinoma of the right adrenal gland was made. The right lumbar region was explored surgically, and a large adrenal tumor was removed. Both pupils became maximally dilated as soon as the tumor was handled. Postoperatively the patient was treated for shock, but in spite of this, death occurred within twenty-four hours. At necropsy the left adrenal gland appeared to be also grossly enlarged. Pheochromocytoma, or chromaffinoma, is a rare tumor. To 1946 about 176 lesions had been recorded, of which only 47 showed endocrine activity. Among these there were 16 bilateral growths, so that the present case is probably the seventeenth. Apart from the history and abdominal palpation, roentgen examination is of help in diagnosis. Recently two new tests have been devised which may prove most helpful in diagnosing the condition. Goldenberg and others (1947) postulated that in a case in which hypertension is due to an increased amount of epinephrine it will be abolished or decreased by the intravenous administration of adrenolytic compounds. The second test, which was developed by Roth and Kvale in 1945, consists of intravenous injection of histamine in saline solution. In patients with a chromaffinoma this is followed immediately by a rise in blood pressure and by the sensations of a typical attack of hypertension. To date medical treatment is not available, unless the observation by Espersen and Dahl-Iversen (1946) can be corroborated. They treated a patient preoperatively with methylthiouracil; complete disappearance of the paroxysmal attacks of hypertension resulted. If an operation is performed, the most critical period is the first twenty-four hours after operation. Use of many substances has been advocated to combat the ensuing shock; epinephrine in large doses has proved the most successful.

Edinburgh Medical Journal

56:129-172 (April) 1949

Functional Nervous Disorders in Childhood. J. L. Henderson.—p. 129.
Changing Concepts in Therapeutics. D. M. Dunlop.—p. 146.
Discoverers of Thoracic Cardiac Nerves. G. A. G. Mitchell.—p. 156.
Points of Local Chest Tenderness in Post-Operative Pulmonary Embolism. C. K. Robertson.—p. 160.

Journal of Laryngology and Otology, London

63:321-362 (June) 1949

Histopathologic Investigations on Localization, Number, Activity and Extent of Otosclerotic Foci. B. Nylén.—p. 321.
Chronic Otitis Media. F. McGuckin.—p. 328.
Points in Pathology, Diagnosis and Treatment of Chronic Maxillary Sinusitis. J. C. Ballantyne and A. R. Rowe.—p. 337.
Nasopharyngeal Tumors. J. I. Munro Black.—p. 342.

Lancet, London

1:1031-1078 (June 18) 1949

*The Menstrual Cycle. S. Zuckerman.—p. 1031.
*Return of Tone in Blood-Vessels of Upper Limb After Sympathectomy. H. Barcroft and A. J. Walker.—p. 1035.
Temporal Arteritis: Report of 7 Cases. S. L. Kaye.—p. 1039.
Partition Chromatography on Paper: Identification of Reducing Substances in Urine. R. H. Horrocks and G. B. Manning.—p. 1042.
New Type of Encephalopathy After General Anesthesia. A. R. Hunter. —p. 1045.
Injection Treatment of Hydrocele. W. W. Wilson.—p. 1048.
Retarded Growth of Limbs as Sequel of Encephalitis Lethargica. R. T. Gaunt.—p. 1049.
Abdominal Relaxation with Decamethonium Iodide (C10) During Cesarean Section. I. M. Young.—p. 1052.
Proguanil Prophylaxis and Intercurrent Infection. D. B. Jelliffe.—p. 1052.

The Menstrual Cycle.—Zuckerman reviews the present status of knowledge on the menstrual cycle. He discusses the time of ovulation, the phases of the menstrual cycle, menstrual cycles without ovulation, uterine periodicity in the absence of ovaries and the hormonal control of the menstrual cycle. He shows that in spite of a vast amount of experimental inquiry into the factors that control periodic uterine bleeding, the limits of action and the interaction of the different steroid hormones on the primate uterus are still far from understood. There has been a tendency to regard the uterus as a purely passively reacting organ, but there are factors which suggest that the uterus may have a rhythm of its own.

Return of Tone in Blood Vessels After Sympathectomy.—The experiments described by Barcroft and Walker were made on 14 sympathectomized hands. The blood vessels in 5 hands were presumably normal, since they had been sympathectomized for excessive sweating. The other 9 hands had been sympathectomized for vascular disease, Raynaud's disease in 6, chilblains in 2, and acrocyanosis in 1. In some of these structural changes had occurred in the vessels, with the result that they could not dilate as widely as normal vessels. A simple plethysmographic method is described for determining the rate of the blood flow in the hand. The blood flow was determined daily for a fortnight after sympathectomy. In every hand tested the most rapid flow was recorded either immediately after sympathectomy or on the following day. The rates of flow through the hands with normal vessels which could dilate fully when the sympathetic tone was released were generally greater than those through the hands with diseased vessels. The results show that the blood flow in all hands decreased rapidly during the remainder of the first week and more slowly during the second. Thus the rapid flow of blood in the freshly sympathectomized hand lasts no longer than forty-eight hours. It has declined by the end of the first week to about a quarter of its postoperative rate, and it has decreased after two weeks to about an eighth. At first sight the observation that the blood flow in the diseased vessels soon returned to near the preoperative rate seems to throw doubt on the value of sympathectomy as a therapeutic measure for vascular disease of the fingers. However, there is conclusive evidence of the excellence of the clinical results. Why blood vessels recover their tone after sympathectomy is still unexplained.

1:1079-1124 (June 25) 1949

Social Factors in Obstetrics. D. Baird.—p. 1079.
Therapeutic and Neurological Aspects of Peripheral Nerve Injuries. W. R. Henderson and D. Taverner.—p. 1084.
Haemolytic Disease of the Newborn Due to Anti-A-Antibodies. K. E. Boorman, B. E. Dodd and R. H. Trinick.—p. 1088.
Streptomycin in Treatment of Actinomycosis: Report on 3 Cases. J. A. Torrens and M. W. W. Wood.—p. 1091.
Intestinal Actinomycosis Treated with Streptomycin. H. S. Pemberton and W. R. Hunter.—p. 1094.
*Retinitis Pigmentosa Associated with Cystinuria: Two Uncommon Inherited Conditions Occurring in Family. W. D. W. Brooks, M. A. Heasman and R. R. H. Lovell.—p. 1096.
*Treatment of Hay-Fever by Injection of Nasal Mucosa with Alcohol. B. Russell.—p. 1098.
Diphtheria Prophylaxis in Very Young Infants. G. Bousfield.—p. 1100.

Retinitis Pigmentosa Associated with Cystinuria in a Family.—Brooks and associates point out that the association of two inherited abnormalities represents an aid in mapping human chromosomes. Retinitis pigmentosa, though uncommon, is not rare as a hereditary disorder, and most cases are not associated with other defects except perhaps cataract, which may be regarded as part of the disease. As far as the authors were able to determine, retinitis pigmentosa and cystinuria have not been reported as occurring together in the same patient and family. The authors describe the history of a family in which retinitis pigmentosa was associated with cystinuria. The first patient in whom the association of retinitis pigmentosa with cystinuria was discovered was an unmarried Jewess, aged 40. Micturition was frequent. The patient's eyesight had been poor, and night blindness had been noticed since early childhood. Retinitis pigmentosa was diagnosed when she was 19. For the past thirteen years she had been conscious of increasing limitation of her peripheral visual fields and dimming of central vision. The patient's parents were distantly related, being third (or fourth?) cousins. The mother of the patient was examined specifically for retinitis pigmentosa and cystinuria, and neither condition was present. The father died at the age of 37; he was never examined specifically for retinitis pigmentosa or cystinuria, but he is remembered as having had good eyesight. The eldest brother of the patient and his two daughters were free from cystinuria and from retinitis pigmentosa. However, another brother had both cystinuria and retinitis pigmentosa. A younger sister had cystinuria but no visual disturbances. Of the two younger brothers, 1 had retinitis pigmentosa and was not examined for cystinuria, the other, who was lost during the war, had apparently been normal. The evidence from this pedigree justifies consideration of the possibility of linkage of the retinitis pigmentosa and cystinuria. Two hypotheses may be considered: (1) retinitis pigmentosa and cystinuria are both recessive, or (2) retinitis is recessive and cystinuria is dominant.

Alcohol Injection for Hay Fever.—For the past twenty years Russell treated pollen allergy by a method which depends on the fact that the mucosa in nasal allergy is not equally sensitive throughout its extent. Except in rare instances the greater part of the visible mucosa does not seem to be concerned in responding to allergens. There are usually small well defined patches which are always on guard, even to some degree in winter, and their exquisite ticklishness can be benumbed by the injection into them of alcohol. The idea of desensitizing the nasal mucosa by injections of alcohol dates back many years. Russell first heard of it from an American colleague during the first world war and first used it in 1921. The treatment is given a week or more before the patient expects to begin sneezing. After listing the instrumentarium required for the treatment and after stressing that the alcohol should be introduced into, not through, the mucosa, the author says that within an hour or two of injection the nasal passage is usually occluded by swelling of the mucosa, the obstruction being increased by a plastic exudate from the area injected. It is therefore undesirable to inject both sides of the nose at once. About four days later it is usually possible to free the nasal passage for breathing by removal of the plastic exudate; after this the opposite side may be treated. Alcohol has been injected, usually with benefit, in more than 100 patients. The result as a rule is to reduce symptoms below the threshold of distress, and often to obliterate them for at least one season. A year later the injected areas may still be insensitive, but a cresentic area at the periphery may have become sensitive—a condition easy to treat with a small further injection. Contraindications to this treatment are the presence of inflammation in the teeth or sinuses, and the (rare) existence of characteristic sensitivity over most of the nasal mucosa.

Proceedings of Royal Society of Medicine, London

42:375-458 (June) 1949. Partial Index

Aspects of Non-Gonococcal Infections of Genital Tract. A. H. Harkness. —p. 390.
Hypotheses Concerning the Aetiology of Dental Caries. G. J. Parfitt. —p. 393.
Aetiology of Swimmers' Exostoses of External Auditory Canals and of Associated Changes in Hearing. W. S. Adams.—p. 424.
Practical Value of Peripheral Nerve Repair. H. J. Seddon.—p. 427.
Retro-Orbital Tissues as Site of Outflow of Cerebrospinal Fluid. E. J. Field and J. B. Brierley.—p. 447.

Tubercle, London

30:145-168 (July) 1949

Primary Serous Pleural Effusion. A. J. F. Eberle.—p. 146.
Irregular Discharges. G. Day.—p. 152.
Tuberculosis in Nurses in New Zealand Hospital. B. C. Thompson. —p. 155.

Acta Medica Scandinavica, Stockholm

133:1-72 (March 26) 1949. Partial Index

*Perforation of Infarcted Interventricular Septum Diagnosed Ante Mortem. R. Grelland.—p. 1.
Detoxification of Benzoic Acid by Glycuronic Acid under Normal Conditions and in Liver Disease. B. Borgstöm.—p. 7.
Gallstone Formation and Gallstone Disease. A. Adlercreutz.—p. 19.
Humoral Regulation of Normoerythropoiesis. G. Oliva, F. Chiuini and C. Tramontana.—p. 27.
*Does Urine Stasis Influence Development of Arterial Hypertension? F. Raaschou.—p. 31.
Arterial Orthostatic Anemia: Aspects of Clinical Forms and Electrocardiographic Changes. B. Sjögren.—p. 45.
Löffler's Syndrome—Periarteritis Nodosa. J. Tomenius.—p. 55.

Perforation of Infarcted Interventricular Septum.—Grelland reports a man, aged 60, in whom perforation of the interventricular septum resulting from coronary occlusion was diagnosed ante mortem: The patient presented typical symptoms of myocardial infarction. His condition was fairly good until the ninth day, when acute symptoms of right heart failure developed associated with physical signs of a septal defect. The patient died twenty-four days after the occurrence of the infarction and fifteen days after the septal perforation. At autopsy a thrombus was found in the right coronary artery with infarction of the posterior part of the septum. In the anterior, lower part of the infarcted area a perforation 1 cm. in diameter was found. The report is illustrated by a photograph of the perforated septum, by phonocardiograms and by electrocardiograms.

Urinary Stasis and Arterial Hypertension.—Raaschou studied postmortem material to establish the incidence of urologic disease among hypertensive patients. All cases of moderately severe and severe hydronephrosis and pyonephrosis, a total of 399, were selected from a total of 6,505 necropsies performed at a Copenhagen hospital from 1937 through 1944. The control series comprised 583 successive necropsies from the postmortem material in 1945. Eighty-three children under 15 years of age were excluded, leaving 500 patients. The incidence of "urologic hypertension" was lower in his necropsy material than he had originally supposed. Noninfected hydronephrosis does not seem to cause renal hypertension. The two conditions occurring together is probably a coincidence, and great reserve is advisable with regard to nephrectomy in cases of noninfected hydronephrosis with associated arterial hypertension. In persons under 60 years of age hydronephrosis complicated by pyelonephritis seems to have some influence on the incidence of arterial hypertension and on the average blood pressure. In persons over 60 years of age the disease seems not to influence the development of arterial hypertension. That the incidence of cerebral hemorrhage is much lower in the hydronephrosis groups than in the control group and that complication by pyelonephritis has no influence on the incidence of cerebral hemorrhage are in accord with the observations in studies of blood pressure in patients over 60 years of age. About ten years ago American writers, on the basis of urographic observations, claimed that about 50 per cent of patients with "essential hypertension" have urologic disease. It appears now that this estimate must be greatly reduced. The present investigation indicates that urinary stasis cannot be assumed to play a part in the causation of arterial hypertension. Only chronic pyelonephritis, notably its atrophic form, may occasionally be complicated by arterial hypertension.

Archivos de Medicina Infantil, Havana

18:67-90 (April, May, June) 1949. Partial Index

*Barbituric Coma in Infant: Picrotoxine Treatment. D. Sosa Bens. —p. 89.

Barbituric Coma.—A child aged 2 years swallowed six tablets of 0.10 Gm. each of amobarbital sodium (amytal sodium®), in the belief that it was candy. She was in deep coma within one hour. Treatment consisted of washing out of her stomach, of intravenous infusion of dextrose in normal solution, and of four intravenous injections of 0.5 cc. of a 30 per cent solution of picrotoxin at half-hour intervals. One hour after the last intravenous injection, one intramuscular injection of 0.5 cc. of the same solution was given. Amino acids were administered by mouth. The patient recovered on the first day of treatment.

Deutsche medizinische Wochenschrift, Stuttgart

74:721-752 (June 10) 1949. Partial Index

Development and Present State of Tuberculosis in German and Other Countries. E. Kröger and H. Reuter.—p. 721.
*Two Years Experiences with Thiosemicarbazone Tb I/698 in Severe Pulmonary Tuberculosis. A. Sturm.—p. 726.
Shock and Collapse in Obstetrics (III.). C. Müller.—p. 732.
Actually Increased Incidence of Acute and Subacute Atrophy of Liver. K. Brass.—p. 733.

Thiosemicarbazone Tb I/698 in Pulmonary Tuberculosis.—Sturm treated 117 patients with severe, exudative, cavernous pulmonary tuberculosis with Domagk's 1-(*p*-acetylaminobenzaldehyde) thiosemicarbazone (thiosemicarbazone Tb I/698). Sixty-four patients (54.7 per cent) showed an increase in body weight of 5 (2 Kg.) to more than 10 pounds (5 Kg.), while 27 patients (23.1 per cent) showed no increase in weight and 26 (22.2 per cent) continued to lose weight. Of the 117 patients 92 were febrile; in 35 of the latter the temperature was restored to normal and in an additional 35 the temperature was lowered. Blood sedimentation rate was restored to normal or reduced in 96 patients (82 per cent); it was not influenced in 21 (18 per cent). Of 78 strongly positive sputums, 57 became negative or weakly positive, and of 39 weakly positive sputums 16 became negative. Roentgenography demonstrated that fresh exudative infiltration in the lung tissue and fresh hematogenous dissemination are particularly amenable to treatment with thiosemicarbazone Tb I/698 while patients with large cavities and induration and with caseous pneumonic processes were resistant. The analysis of the effect of the new drug suggests that the drug has a double action by changing the reaction of the organism to the pathogen and by a chemicobacteriostatic effect on the tubercle bacillus itself. Severe granulocytopenia occurred in 2 patients, but this risk is no greater than that associated with aminopyrine therapy, provided that 0.05 Gm. of the new drug is employed as initial dose and that the daily total dose does not exceed 0.2 or at most 0.3 Gm. A more active treatment of exudative pulmonary tuberculosis may be possible by spray inhalation of the new drug, by injection into the cavities, by Monaldi's suction drainage and by extension of indications for pneumothorax and phrenic nerve exeresis followed by pneumoperitoneum.

Deutsche Zeitschrift für Nervenheilkunde, Berlin

160:137-298 (April 9) 1949. Partial Index

*Microscopic Observations on Changes in Cardiac Ganglions in Aged Persons and During Coronary Sclerosis. H. Hermann.—p. 137.
Insulin Shock Therapy in Certain Disorders of Persons with Vasopathico-Allergic Constitution (Vasopathic Disorders, Idiopathic Migraine, Thromboangiitis Obliterans). H. Greving and K.-H. Schiffer.—p. 155.
Significance of Mesodermal Tissue in Regeneration of Nerves. F. Hiller. —p. 176.
*Cerebral Cysts Following Cerebral Contusions. B. Borschel.—p. 221.
Animal Experiments on Central Genesis of Diphtheria. E. Frick.—p. 237.
Pathologic Anatomy of Herpes Zoster. H. Orthner.—p. 251.

Changes in Cardiac Ganglions in the Aged and During Coronary Sclerosis.—The observations reported by Hermann were made on 65 human hearts: 25 from persons with severe coronary sclerosis, 25 from persons between 60 and 88 years of age, but without coronary sclerosis and 15 from persons up to 40 years of age, these last served as controls. Particular attention was given to the ganglions in the posterior wall of the right auricle. The silver impregnation method of Bielschowsky-Gross was used. In every case of coronary sclerosis the majority of the nerve cells showed changes in the nuclei and the cell plasma. The nuclei of the ganglion cells were vacuolized, pyknotic, deformed or otherwise defective. Swelling, vacuolation or homogenization characterize the changes in the nerve plasm. The dendrites of the ganglion cells were puffed up in some sections, contained vacuoles or formed hollow cylinders. The covering plasmodium of diseased ganglion cells appeared spotted or streaked and contained vacuoles. It is not possible to deduce the presence of coronary sclerosis from the pathologic changes that exist in the nerve cells of the posterior wall of the right auricle, because the same changes may be found in the nerve tissue in other clinical conditions. Young ganglion cells mature into adult cells throughout life; at the same time other nerve cells degenerate. In young persons the ganglions contain more young and healthy and less degenerated nerve cells than is the case in older adults and in the aged.

Brain Cysts Following Cerebral Contusion.—Borschel presents the histories of 6 patients in whom brain cysts developed following contusion of the brain. Four cysts were located in the occipital part of the brain, 1 in the frontal part and one in the temporal lobe. These locations corroborate the concept that the poles of the brain are predisposed to traumatic lesions. In 4 cases epileptic reactions resulted and led to diagnostic clarification. One patient presented a neurasthenic picture and one had a syndrome indicating involvement of the frontal lobe. The neurologic manifestations corresponded to the localization of the cyst. Contrary to observations made by Kroll, signs of increased pressure on the brain were absent. Diagnosis of the cysts requires roentgenographic study with air as the contrast medium. When there is no communication with the cerebrospinal fluid spaces, direct puncture can be performed. The differential diagnosis must rule out cystic tumors, cysts caused by parasites and cavity formations resulting from malacia or hemorrhage. In the pathogenesis one must consider the direct mechanical factors of the contused area and the circulatory factors. These may help to explain the large size of some cysts after apparently mild trauma.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

93:1397-1472 (April 30) 1949. **Partial Index**

Experiences with Culture of Micro-Organisms from Blood. J. G. Heyl and J. H. Bekker.—p. 1410.

Results of Treatment with Dicumarol in 48 Patients with Venous Thrombosis and Pulmonary Embolism. T. Boen Kie.—p. 1413.

*Arteriovenous Fistula of Long Duration. P. J. Zuidema.—p. 1421.

Arteriovenous Fistula of Long Duration.—Zuidema describes a man, aged 56, who at the age of 17 sustained a knife wound in the left thigh. In later years the man noticed that he was able to suppress attacks of palpitation by forceful bending of the left knee. This maneuver decreased the pulse frequency by from 20 to 30 beats (Branham's sign). Later, circulatory disturbances developed in the left leg and foot. The heart was considerably enlarged, particularly to the left, but no signs of heart failure were present. Signs of chronic venous insufficiency of the left leg (edema, varicose veins and ulceration) were increasing and caused much discomfort. Surgical closure of the fistula was considered, but in view of the great risk in such a long-standing condition an operation was not recommended.

Neurobiologia, Pernambuco

12:1-98 (March) 1949. **Partial Index**

*Tumor Metastases of Brain and Tumors of Nervous System Producing Metastases. C. Gama.—p. 1.

Tumor Metastases of Brain.—From the 692 brain tumors and 41 spinal tumors treated by Gama, he chose tumors which represent true metastases from other organs. There were 11 tumors which invaded the brain by way of the blood stream, 3 by way of the lymphatic channels and 4 spinal cord and brain metastases by way of the arachnoid space. The histologic nature of those tumors was as follows: carcinoma 67 per cent, hemangioblastoma 16.5 per cent, medulloblastoma 5.5 per cent, hypernephroma 5.5 per cent, sarcoma 5.5 per cent. The primary tumor was in the mammary gland in 28 per cent, in the lung in 17 per cent, in the base of the skull in 11 per cent, in the cerebellum in 11 per cent, in the cerebrum in 5.5 per cent, in the scalp in 5.5 per cent, in the liver in 5.5 per cent, in the uterus in 5.5 per cent and in the adrenal glands in 5.5 per cent.

Presse Médicale, Paris

57:519-534 (June 11) 1949. **Partial Index**

*Curative Effect of Thiosemicarbazone Tb I [1-(p-acetylaminobenzaldehyde) thiosemicarbazone] in Experimental Tuberculosis of Mice. C. Levaditi. —p. 519.

*Combined Coramine-Electroshock Therapy in Treatment of Psychotic Excitement. M. and G. Jacquel, Amoussou and Racadot.—p. 521.

Thiosemicarbazone in Tuberculosis of Mice.—Levaditi administered 10 mg. of 1-(para-acetylaminobenzaldehyde) thiosemicarbazone (thiosemicarbazone Tb 1) for forty-six days to mice which were previously infected by the intravenous route with 1 mg. of a three week culture of the H 512 strain of Mycobacterium tuberculosis. Results proved that this synthetic chemical derivative prepared by Domagk and associates is an active therapeutic agent in experimental tuberculosis of mice, but it is less effective than streptomycin. The effect of the new drug resembles that of para-aminosalicylic acid, and it may be superior to the latter. The author's research confirmed Domagk's experimental observations in guinea pigs.

Combined Nikethamide-Electroshock Treatment of Psychotic Excitement.—Jacquel and co-workers treated 30 patients presenting states of psychotic excitement by Fabing's combined nikethamide-electroshock therapy. The patients received daily intravenous injections of 6 or 7 cc. of nikethamide followed by electrically induced convulsions. Treatment for six days was sufficient in the majority of the cases. Results confirmed those obtained by Fabing. Psychomotor excitement in manic patients was reduced rapidly, and their general condition was improved; results were satisfactory even in patients with syndromes of long standing or with presenile conditions. In schizophrenic states the behavior was improved, and there was a beneficial effect on the patient's impulsion. These observations call attention to the importance of the problem of cerebral circulation in psychiatry.

Revue Médicale de Liège

4:317-348 (June 15) 1949

*Hemorrhagic Adrenalitis. Considerations of Two Mechanisms Responsible for Certain Rapid Deaths, Mysterious to the Practitioner. J. Firket, E. Nizet and A. De Scoville.—p. 317.

Department of Anesthesia of University of Oxford. M. Hanquet.—p. 325.

Subacute Appendicitis with Symptomatology of Cyst of Ovary. J. Naveau. —p. 327.

Hemorrhagic Adrenalitis.—Firket and co-workers report 2 cases of hemorrhagic adrenalitis with sudden death in a woman aged 32 and in a boy aged 6, both of whom apparently had been in good health. In the woman death occurred within forty-eight hours after the abortion of a 4½ month fetus. Necropsy revealed bilateral hemorrhagic adrenalitis which resulted from bacillary embolism, Clostridium welchii being transported by the blood stream from the uterus to the adrenals. The boy presented a typical case of Waterhouse-Friderichsen syndrome with vomiting, diarrhea, generalized purpura, stupor and coma resulting in death within twenty-four hours after he had fallen down in the street while playing. The tonsils showed a pultaceous exudate. Blood culture was negative. Necropsy revealed considerable vasodilatation in the adrenals with subendothelial fibrinous depots in the capillaries of the glands and definite endothelial ruptures with extravasation of blood. The adrenals were probably affected by a hyperergic disease due to the localization of an allergen probably of bacterial origin, but resulting from a commonplace infection such as sore throat. In cases of this type it is not sufficient to combat the insufficiency of the adrenals because it may be moderate or even absent. Anti-infectious agents such as the sulfonamide compounds, intravenous penicillin and antimeningococcic serum should be administered. The antiallergic effect of ascorbic acid (vitamin C) should not be overlooked.

Ugeskrift for Laeger, Copenhagen

111:497-520 (May 5) 1949. **Partial Index**

*Catheterization of Heart in Congenital Heart Disease. P. Eskildsen, H. Gøtsche and A. Tybjaerg Hansen.—p. 497.

Operations for Congenital Affections of Heart and Large Blood Vessels. E. Husfeldt.—p. 506.

Spontaneous Variations in Metabolism in Neuroses and Psychopathy. H. I. Schou.—p. 507.

Methyl Violet as Antiseptic. P. Wedel.—p. 509.

Catheterization of Heart in Congenital Heart Disease. —Eskildsen and his associates deal briefly with the technic of catheterization of the heart. They review the importance of the method in the diagnosis of congenital heart disease on the basis of 122 cases examined in the Rikshospital. They stress that both registration of the pressure and the pressure variations in the different cavities of the heart and the large vessels as well as oxygen analysis of numerous blood samples from these cavities are essential. Cyanotic patients should be examined between the ages of 3 and 10 years, acyanotic patients at about the age of 6, the conditions for both examination and operation being most favorable at these ages.

Book Notices

Medicine Throughout Antiquity. By Benjamin Lee Gordon, M.D., Attending Ophthalmologist to Shore Memorial Hospital, Somers Point, N. J. Foreword by Dr. Max Neuburger. Cloth. Price, $6. Pp. 818, with 157 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1949.

Good medical histories are few and good medical histories that deal with ancient medicine are rare indeed. Dr. Gordon's book should therefore be a welcome addition to the slender field. A volume of over 800 pages, well illustrated and well printed on good stock, it should find wide acceptance not only in the limited circle of the profession that is historically minded but in a much wider group that will appreciate the opportunity of obtaining greater familiarity in a cultural field that is commonly neglected in the early years of professional activity.

Dr. Gordon writes well and covers a wide territory without for a moment being superficial; he does not entangle the reader in pedantic detail. The purpose of the book, as the author states, "is to present an historical résumé of medicine as it was conceived, developed and practiced by the various peoples of antiquity. A determined effort has been made throughout the work to emphasize outstanding historical facts."

The material is remarkably well organized. It begins with a survey of early man and the archeologic evidences of prehistoric medicine and develops in sequence the medical concepts that prevailed in the early eastern world. The Greco-Roman period is well documented. An unusual excursion is provided by a study of Talmudic medicine.

In a survey of the text I can take exception to but one interpretation, and that is the suggestion that Hippocrates was interested in "astrology" because Hippocrates wrote that "attention must be paid to the rising of the stars, especially to those of Sirius and Arcturus and further, to the setting of the Pleides, for most diseases reach a crisis during such periods." The position of the stars provided the Greek with a calendar. Hippocrates merely called attention to the fact that diseases change with the seasons. Then, as now, seasonal extremes provided hurdles for the sick organism, "for most diseases reach a crisis during such periods," as Hippocrates expressed it.

Dr. Gordon's book makes evident an unusual breadth not only of medical knowledge but of the associated and underlying fields of study which have in the past century contributed to our understanding of man's cultural rise.

Psychology of Personal Adjustment: Students' Introduction to Mental Hygiene: By Fred McKinney, Professor of Psychology and Psychologist in the Student Health Service, University of Missouri, Columbia, Mo. Second edition. Cloth. Price, $6. Pp. 752, with illustrations. John Wiley & Sons, Inc., 440 4th Ave., New York 16: Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, 1949.

This is a book of practical psychology, with particular application at the college ages. Much of the material in the text has been taught in orientation, mental health and vocational guidance classes. Essentially, the book presents subject matter close to the life of the student and appropriate to his needs in meeting the many perplexing problems encountered during college years. However, such adjustment is closely integrated with postcollege life.

After discussion dealing with the adjustment process in general and orientation to college, specific topics, such as concentration, learning and thinking, understanding one's self, personality development and efficiency, personal orientation, vocational selection, premarital adjustment and social and emotional development, are presented. Except for the final chapter, which is really a summary section covering total adjustment to living, the fifteen chapters in the book may be regarded as units which can be used independently or rearranged to fit the needs of specific teaching situations.

Suggestions for supplementary reading and comprehensive lists of references are given at the end of each chapter. The book will probably be most useful for orientation purposes in the early college years, but may well be utilized as a supplement to courses in general and applied psychology or in courses in mental hygiene or personal adjustment.

The Rhesus Factor. By G. Fulton Roberts, M.A., M.B., Demonstrator in Pathology in the University of Cambridge, Cambridge, England. Second edition. Paper. Price, 3s.6d. Pp. 64. William Heinemann Medical Books, Ltd., 99 Great Russell St., London, W.C. 1, 1949.

This pamphlet is intended as an introduction to the subject of the Rhesus factors for the clinician. The demand for such a pamphlet is evident from the fact that the first edition has gone through five printings and a second edition had to be prepared. The presentation is simple and clear. The booklet makes no attempt to be complete or detailed and lists only twenty references, mostly British sources. Accordingly, the presentation is somewhat unbalanced and the booklet repeats some errors characteristic of British writings on the subject, such as the incorrect assumption that one's Rh genotype can be determined by serologic tests alone without study of the family. While an attempt is made to introduce the Fisher C-D-E notations in the fifth and sixth chapters, it is significant that in the seventh chapter and elsewhere in the booklet the author is compelled to use the more correct and clear international Rh-Hr nomenclature. In the booklet, the important original contributions of American workers are mostly either ignored or used without adequate citation of the original source. The bibliography should also have included references to more detailed and authoritative reviews, such as those of Potter, Wiener and Bessis, which could be consulted by those readers desiring additional information regarding the subject.

Clinical Chemistry in Practical Medicine. By C. P. Stewart, M.Sc., Ph.D., Senior Biochemist, Royal Infirmary, Edinburgh, and D. M. Dunlop, B.A., M.D., F.R.C.P., Christian Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Third edition. Cloth. Price, $5. Pp. 324, with 30 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

This is a completely revised edition of a British text, which aims to provide the physician with the logic behind laboratory determinations, the correct way of performing them and their use in arriving at correct diagnosis and therapy. The aim is praiseworthy but not original. The shelf of pamphlets, booklets, books and two volume treatises on this subject has been growing rapidly over the years. Yet their common aim, that of integrating laboratory and clinical medicine, is far from being realized. The average medical student becomes slightly bewildered during his preclinical biochemistry courses and then proceeds to forget both the useful and the useless information he has acquired. In his clinical years and during hospital residence he falls into the habit of "ordering" tests. Thereafter a chemical determination becomes a number—glucose 80, urea 15 and the like; the more such numbers a patient's chart possesses, the "better" is the "case worked up." Only when the teaching of biochemistry will become better integrated with that of the clinical sciences can one expect "understanding" of laboratory determinations.

The present book is, on the whole, a simple presentation of the subject, oriented clinically. Yet the chapters on the metabolic rate and on neutrality regulation are overburdened with unnecessary calculations, formulas and schemes which may effectively discourage their reading by the harried practitioner.

The style is good, the information is correct and reasonably up to date and the index is well arranged.

Eden & Holland's Manual of Obstetrics. By Alan Brews, M.D., M.S., M.R.C.P., Obstetrical and Gynaecological Surgeon, the London Hospital, London. Ninth edition. Fabrikoid. Price, 42s. Pp. 796, with 441 illustrations. J. & A. Churchill, Ltd., 104 Gloucester Place, London, W. 1, 1948.

The first edition of this well known textbook on obstetrics was published in 1906. This ninth edition has maintained the high standards of the preceding editions. Although it represents to a large extent the practice and teaching of obstetrics at the London Hospital, in its widespread popularity it must necessarily reflect British obstetric thought.

The book is logically divided into nine parts and an appendix. The sequence consists of normal and abnormal pregnancy, normal and abnormal labor, the puerperium, the fetus, the newly born child, operations and maternal morbidity and mortality. The various chapters contain numerous well chosen illustrations, many of which have been taken from standard English and American textbooks.

The content of the book is inclusive and up to date. There are few ideas that deserve any serious comment. Many of the conclusions are similar to those that have been made in this country's large medical centers. The value of pelvimetry by conventional methods is seriously questioned. However, in the discussion on delivery of women with contracted pelves, the induction of premature labor is still seriously considered. The hot uterine douche is recommended for postpartum hemorrhage, a practice which has been discounted completely in the United States. The term "conservative" for treatment is not a good one, although it still retains considerable popularity in this country. It is definitely not conservative to deliver a patient through the pelvis at the cost of an injured baby, irreparable trauma and even maternal death, nor is it radical to do a cesarean section to reduce the likelihood of these hazards. In a discussion of ergot, the isolation of the active principle in 1935 is credited to Dudley and Moir, but it was discovered and described simultaneously in two other laboratories.

None of these criticisms detract from the excellent text, which can be recommended to anyone interested in the specialty. It is well written and interesting to read and should retain its many friends in all English-speaking countries.

Manual of Medical Emergencies. By Stuart C. Cullen, M.D., Professor of Surgery, State University of Iowa College of Medicine, Iowa City, and E. G. Gross, M.D., Professor and Head of Department of Pharmacology, State University of Iowa College of Medicine. Cloth. Price, $3.75. Pp. 267, with 29 illustrations. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1949.

A physician seldom has time to consult the literature exhaustively when confronted with a medical emergency. The manual prepared by Drs. Cullen and Gross deals particularly with immediate treatment and devotes little space to diagnosis and later therapy. The authors discuss asphyxia and artificial respiration, oxygen therapy, circulatory emergencies, acute poisoning, local anesthetic drug reactions, head injuries, allergic disturbances, the severely agitated, convulsive and comatose patients and a few miscellaneous emergencies, such as gastric dilatation, burns and other heat injuries. A chapter dealing with venipuncture and another dealing with drugs useful in emergencies are included.

The selection of subject matter for a book of this kind is difficult, because the author must decide which illnesses fall within the province of his subject and which are, for example, surgical; among the medical illnesses he must select the emergencies from the less urgent. The authors have limited their field significantly; for example, they do not discuss severe thyrotoxicosis, transfusion reactions, the addisonian crisis, botulism, conditions wherein pronounced hematemesis occurs, acute glaucoma or renal colic. Asphyxia, circulatory disturbances, acute poisoning and head injuries are discussed at greatest length.

In general, the procedures recommended will doubtless meet approval. Valuable information frequently omitted in larger volumes is presented in the discussions of general principles of emergency treatment, oxygen therapy and medical care of the comatose patient. Emphasis is fittingly given to problems of asphyxia in the seriously sick and to procedures for maintaining a patent airway. The chapters on acute poisoning and on head injuries are well outlined and provide sound, concise information. The book is adaptable for ready reference and, though somewhat limited in scope, should be a useful addition to the physician's library.

Sugar: Its Production, Technology, and Uses. By Andrew Van Hook, Professor of Chemistry, College of the Holy Cross, Worcester, Mass. Cloth. Price, $3. Pp. 155, with 24 illustrations. The Ronald Press Co., 15 E. 26th St., New York 10, 1949.

This book is intended for the layman who is interested in general information about the sugar industry and for others who wish to get a comprehensive picture. The author discusses the chemistry of sugar, production and refining methods for both cane and beet sugar, trade and economic aspects, a few of the by-products and, in the last chapter, a concise history of the industry, including a few philosophic considerations. The author does not go into the details of the nutritive contribution of sugar or of carbohydrate metabolism. The author states, "There are many reasons why it is desirable to increase the consumption of sugar." This statement could be questioned, especially in view of the growing problem of obesity that exists in our adult population. In defense of the author, it must be said that he clearly indicates that calories are only one of the important items of the diet.

The main purpose of the book is accomplished. It presents a well balanced consideration of the subject and succeeds admirably in maintaining the interest of the reader.

Das Krebsproblem: Einführung in die allgemeine Geschwulstlehre für Studierende, Ärzte und Naturwissenschaftler. Von K. H. Bauer, o.ö. Professor für Chirurgie an der Universität Heidelberg. Paper. Price, 42 marks. Pp. 758, with 71 illustrations. Springer-Verlag, Jebenstrasse 1, Berlin-Charlottenburg 2, 1949.

There is extensive literature on cancer widely distributed in many books and journals. Much of the work has been done by specialists, and the results of their work, due to its technical nature and language, have been largely incomprehensible to practicing physicians caring for patients with cancer. The purpose of the author of this volume was to gather as many of the significant scientific data as possible and to present them in an understandable way to the physician, with interpretations based on the author's wide clinical experience. The results have been successful. Many thousands of references have been consulted, and the results have been digested and presented in an interesting and scholarly manner.

The book has been organized in three main divisions, namely, the characteristics, the development, and the treatment of cancers of animals and man. In the first section the nature of the disease, statistics, pathology and biochemistry of cancer are reviewed. In the second section the origin of cancer has been considered from the standpoints of genetics, hormones, viruses, chemicals and physical agents. In the third section the chemotherapy of animal tumors and the diagnosis, available methods of treatment and prophylaxis of cancer are presented. The final section consists of supplementary data which appeared just before publication of the work bringing it up to date.

This volume was prepared under obvious difficulties, and some of the important foreign literature was not available to the author. Professor Bauer has, however, largely succeeded in a task which was tremendous. As a massive contribution from the library flavored by pertinent remarks from the clinic of a practicing surgeon, this volume might be read with profit by all serious students of the cancer problem.

Sexual Behavior: Normal and Abnormal. By Eustace Chesser, M.D. Cloth. Price, $3.75. Pp. 295. Roy Publishers, A.N., 25 W. 45th St., New York 19, 1949.

The author of this book, the dust jacket informs us, is "an eminent physician and psychologist who has had wide experience as a sexologist and marriage counsellor." The main body of the work is devoted to a discussion of the emotional background and factors which underlie sexual deviations, major and minor. He includes in his list of perversions the rejection by women of the maternal role, which he calls "auto-matricide," and states that this is the greatest perversion of all.

In the early chapters he attempts to show how present day attitudes toward sexual relations develop. In the second chapter, entitled "St. Paul, Judaism and Human Relations," he stops to break a lance with St. Paul in a manner not too effectual. He classes him among "the world's most dangerous sex reactionaries" (p. 26), after a rather spotty, one-sided and superficial consideration of his place and influence on present day mores.

The author regards women as "Nature's chosen sex" and states (p. 71) that "man's assumption of superiority is due to a feeling of inferiority—that man is vaguely conscious of his true position. He knows how utterly dependent he has always been upon woman, first his mother, then his wife. He knows too that his highest achievements cannot possibly enable him to stand upon truly equal ground with woman." Dr. Chesser by the same token has little time for the "militant feminist," whom he correctly sees as an emotionally distressed female.

The main body of the work concerns itself with emotional growth and development and indicates how sexual deviations can arise from arrests and overemphasis at various phases of infancy and childhood. The author then discusses the major sexual abnormalities and the minor deviations and their effect on marital adjustment.

The author's approach to the problem is holistic, and his discussion of "How Sex Chains are Broken" and "Methods of Treatment" are sensible, calm and well reasoned. The final chapter, entitled "Re-education for Total Living," shows evidence of the wide experience and sensible approach of the author to the problem.

The book is not a medical book in the strict sense of the word, and yet physicians who are puzzled by the various cases of sexual deviations which they encounter will find a reasonable explanation of their causation here. There is nothing new or startling to be found, except the aforementioned discussion of "auto-matricide," and, likewise, there are no hints of easy cures.

The book is calm, considered and interestingly written.

Clinical Endocrinology for Practitioners and Students. By Laurence Martin, M.D., F.R.C.P., Physician to Addenbrooke's Hospital, Cambridge, and Martin Hynes, M.D., M.R.C.P., Reader in Medicine in the University of Cambridge. Foreword by Sir Lionel Whitby, M.D., F.R.C.P., D.P.H., Regius Professor of Physic, University of Cambridge. Cloth. Price, $4.50. Pp. 222, with 33 illustrations. The Blakiston Company, 1012 Walnut St., Philadelphia 5, [1949].

The authors have undertaken a difficult task, that of writing a simple, reasonably short, clinical manual on endocrine diseases, in the face of the phenomenal, almost daily changes in our knowledge of the functions and uses of the hormones. They have succeeded, because they have emphasized those aspects of the subject which are most important from the standpoint of clinical diagnosis and therapy. The newer developments are not neglected, and the bibliography at the end of each chapter has been carefully selected. The style is simple and readable.

The book's usefulness is restricted, since it forms only an introduction to the field. The existing larger treatises may have much more detailed information, but they are often confusing to the novice. Drs. Martin and Hynes have built a textbook bridge between the beginner and the mountain of endocrine literature.

Electrocardiographic Technique: A Manual for Physicians, Nurses and Technicians. By Kurt Schnitzer, R.T., M.D. Cloth. Price, $3.50. Pp. 96, with 46 illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

In dealing with this short monograph, two approaches can be made. First, is it necessary? Second, how well is it done? The book is too elementary for anyone except the beginning technician. It is not advisable to have anyone but a physician do either the exercise or the anoxemia test. Shaving the hair of a male patient is not necessary and is often upsetting. It is wrong to talk about electricity or electric currents in explaining the test to any patient, as this may lead to apprehension. The electrode should not be used in applying the jelly. Paint should be removed from a pipe used for grounding. These are minor criticisms compared to the objection of the reviewer to the major importance of the monograph. Learning the technic of electrocardiography is best done through experience initiated by understudying an expert technician, supplemented by the instructions prepared by each manufacturer of electrocardiographic instruments. There seems, therefore, no useful function for this kind of book.

Maternity Care in a Spanish-American Community of New Mexico. By Sister M. Lucia van der Eerden, S.C.M.M. A Dissertation Submitted to the Faculty of the Graduate School of Arts and Sciences of the Catholic University of America in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy. The Catholic University of America, Anthropological Series No. 13. Paper. Price, $1. Pp. 75. Catholic University of America Press, Washington, D. C., 1948.

This is a report of a study on maternal care made by the author in a small Spanish-American community during a three month period in 1944. The high maternal and fetal mortality rate in this area prompted the study. The author found that mothers did not receive prenatal care but depended on the advice and guidance of the older women of the community. Midwives had only rudimentary or no training. However, a growing minority of the people have come to look on the physician as a better attendant during pregnancy and labor than the midwife. The author concludes that, for the immediate future, trained nurse-midwives would be more acceptable to the majority of these Spanish-Americans and that their work would result in a decreased maternal mortality rate.

Biochemical Preparations. Volume I. Advisory Board: W. Mansfield Clark and others. Editorial Board: Herbert E. Carter, Editor-in-Chief, and others. Cloth. Price, $2.50. Pp. 76. John Wiley & Sons, Inc., 440 4th Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C. 2, 1949.

This volume is the first of a series intended to be published every twelve to sixteen months. It is to serve as a source of reliable procedures for the preparation of biochemical compounds of interest. These procedures are authoritative and checked by a laboratory other than that of the submitter.

The preparations of the following compounds are described in volume I: adenosine diphosphate, adenosine triphosphate, *l*-analine and *l*-serine, azobenzene-*p*-sulfonic acid trihydrate, *p*-hydroxyazobenzene-*p*′-sulfonic acid, 5-nitronaphthalene-1-sulfonic acid dihydrate, casein, β-3,4-dihydroxyphenyl-*l*-analine, diphosphopyridine nucleotide, the α-glucose-1-phosphates, *l*-glutamine, *dl*-glyceraldehyde-3-phosphoric acid, lycopene, *l*-lysine monohydrochloride, lysozyme and *d*-tyrosine.

Each preparation is described as to principle, starting material, procedure, properties and purity of product and methods of preparation. Footnotes and comments on the descriptions are plentiful. References to original papers are given. This series will provide biochemists and medical investigators with preparations which can be adequately controlled and checked in order to eliminate a common source of discrepancy in biologic investigations.

Manual of Clinical Laboratory Methods. By Opal E. Hepler, Ph.D., M.D., Associate Professor of Pathology, Northwestern University Medical School, Chicago. With a foreword by James P. Simonds, Ph.D., M.D. Fourth edition. Cloth. Price, $8.50. Pp. 387, with 36 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1949.

An outline of laboratory methods primarily prepared for use in the teaching of medical students and laboratory technicians, it is not a textbook of clinical pathology. Clinical significance of tests given are not discussed in any detail. The present edition is larger and more extensively illustrated than previous editions, which should enhance its usefulness proportionately. Urinalysis, bacteriology, special gastric and duodenal contents testing, tests of hepatic function, serologic tests and clinical chemical determinations are well covered. As a guide for the instruction and use of medical students and laboratory technicians, this manual can be definitely recommended.

Living Anatomy: A Photographic Atlas of Muscles in Action and Surface Contours. By R. D. Lockhart, M.D., Ch.M., Regius Professor of Anatomy, University of Aberdeen, Aberdeen, Scotland. Cloth. Price, $4. Pp. 71, with 149 illustrations. Oxford University Press, 114 5th Ave., New York 11, 1948.

Anyone who is interested in the external physical appearance and the function of the skeletal musculature of the human body will find this book useful. The identification is extensively aided by many well executed photographs. The selection of the models and the photography are excellent.

Techniques Chirurgicales Vaginales: Possibilités et Limites. Par Eric Weber. Préface du Professeur A. Labhardt. Paper. Price, 500 francs. Pp. 144, with 126 illustrations. J.-B. Ballière et Fils, 19, Rue Hautefeuille, Paris, 6^e, 1948.

This is a small, unpretentious volume describing the technic of the various gynecologic procedures. Most of the operations are illustrated by simple line drawings, which help considerably to clarify the text. The book can be read with profit by all who are interested in gynecologic surgery.

Sugar: Facts and Figures. Cloth. Pp. 159, with illustrations. United States Cuban Sugar Council, 136 Front St., New York 5, 1948.

This is a book for laymen, prepared to promote a wider public understanding of the sugar-producing industry. It tells how and where sugar is produced; it gives production and consumption data and discusses legislation affecting sugar production. The foreword is written by David M. Keiser, chairman, United States Cuban Sugar Council.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

OPERATIONS TO PRODUCE STERILITY

To the Editor:—A married couple has several normal children; the mother is in need of surgical treatment for a pelvic repair, rectocele, retroversion and infected lacerated cervix. Is the surgeon, in these circumstances, justified in doing the following procedures: (1) tying off the tubes with silk, (2) salpingostomy and (3) salpingectomy? Is there any legal liability in the performance of these operations? Should one secure a statement of authorization from a patient? M.D., Ohio.

Because of numerous inquiries received on this subject, the Bureau of Legal Medicine and Legislation has prepared the following memorandum, which comprises all the available information with respect to the legality of the operations of this nature.

A person of mature years and sound mind can ordinarily give consent to an operation on himself. The parent of a minor can give consent to an operation on his child. The guardian of a person of unsound mind may authorize an operation on his ward. Except in the gravest emergency, an operation should not be done without some such consent. The right to give such consent is limited, however, by the interest of the state in the welfare of its citizens. A person cannot subject himself, nor can a parent subject a child, nor a guardian his ward, to an operation that will jeopardize life without an adequate end in view. The state has an interest, too, not merely in the preservation of the individual but also in the perpetuation of its people through the bringing forth and the nurturing of children. The same public policy that underlies laws to prevent contraception and criminal abortion applies to operations that produce sterility, even though that policy is not written in statutes specificially forbidding such operations. Because of the absence of such statutes and of court decisions bearing on the subject, the circumstances in which a person can give valid consent to an operation of this kind are not altogether clear. Consent is doubtless valid if the operation is necessary (1) to relieve or cure some existing disease or (2) to safeguard the life of the patient when pregnancy, because of some existing disease or defect, would gravely endanger her existence. Consent is probably valid if the operation is required to prevent the birth of diseased or defective offspring, when some existing transmissible disease or taint renders that result reasonably likely to follow conception. The validity of consent to operations not required by any of the conditions named would be at least open to question. In any case the physician, before proceeding with any operation that will produce sterility, should obtain from the patient, or from his parent or guardian, and from the spouse of a married patient, written consent in a form that shows that the patient, parent or guardian—and the spouse, if his or her consent is required—consents with full knowledge of the purpose of the operation and of its effects.

A case arose in Minnesota in 1934, involving an operation to produce sterility, *Christensen v. Thornby, 255 N. W. 620.* In that case, the attending physician felt that his patient's health contraindicated any future pregnancy and the matter was discussed with the patient's husband. Because of the relative simplicity of the operation, it was agreed that the husband would submit to a vasectomy and one was performed. A future pregnancy did result, however, and a healthy baby was delivered without any detriment to the mother. The husband then refused to pay the operating surgeon and based his refusal in part on the contention that the entire agreement was against public policy. The Supreme Court of Minnesota held that in view of the fact that the operation was performed for a therapeutic reason no contravention of public policy resulted. The surgeon was permitted to recover his fee.

In an article that appeared in the *Rocky Mountain Law Review* for June 1942, entitled "Antecedent Grounds of Liability in the Practice of Surgery," by Hubert Winston Smith, the author discussed nontherapeutic sterilization operations in part as follows:

"The problem must be approached in stages, the first inquiry being whether a nontherapeutic sterilization is illegal. Castration so alters the personality and physical constitution that its performance, even with consent, would doubtless constitute the crime of mayhem under the common law. Present day sterilization procedures of vasectomy on the male and salpingectomy on the female do not have such consequences; they do not impair hormone balance, alter personality, render the subject unfit to fight or less competent to earn a livelihood. It must be observed that present day mayhem statutes both in England and a majority of American states use language which substantially broadens the common law concept of this crime. None specifically denounces sterilization. Nevertheless, in this operation we have a wounding for an asocial purpose, a breaking of the skin, a severance of an organ, and the permanent destruction of a socially useful bodily function. In many states the court will have no great trouble in finding that nontherapeutic sterilizations constitute maim, that consent to the criminal act is void for all purposes, and that the intention of the criminal statute as well as policy requires that the subject be given a right of action in tort as for a battery. It must be remembered, also, that all the elements of criminal assault and battery are present, for the surgeon intends not only the touching but the final consequences produced, of destroying the reproductive function, and the act has no justification. Without straining to make the operation into a criminal assault and battery in order to void consent, it seems possible to do so on the ground of public policy. Here we have asocial conduct, not performed to advance any valid primary interest, intentional in character and full of risk of physical injury to the subject, as well as to the public interest in maintenance of the reproductive capacity, and we look in vain for any reason why society should consider consent justification. Indeed, the contrary interests of society, it is believed, amount to a policy which will suspend the individualistic doctrines of *volenti non fit injuria* and *pari delicto*, and, because of the unnecessary risk of injury, the law of torts may well give the consenting subject a right of action for damages against the surgeon as an additional deterrent to stop non-therapeutic sterilizations.

"Non-therapeutic sterilizations may collide with public policy of the particular state in reference to birth control, for the operation is a final form of contraception. In those states which forbid birth control, non-therapeutic sterilization would seem clearly contrary to public policy. Even in those states which take a benevolent view toward contraception, it may be held that such radical and irrevocable measures as sterilization are unreasonable forms of contraception violative of the social interest in maintenance of the birth rate."

In concluding his discussion of this particular problem, Dr. Smith offers this advice:

"At the present moment, it would appear that the surgeon incurs a definite risk of civil liability in tort for doing a non-therapeutic sterilization. Before he performs such a procedure, he should consider whether any medical justification exists. That a woman has several children and the family is too poor to give proper care to further offspring, alone constitutes no more than a sociological ground, best left for legislative sanction. Courts should not bring such cases under the head of therapeutic justification by a process of stretching medical indications into a mere fiction. As in the abortion cases, the surgeon will do well to have an independent physician make an examination to verify the medical propriety of the procedure and to require both husband and wife to sign a consent form which shows that the material facts and the medical grounds for surgery were fully disclosed prior to operation."

In 1932, the Office of the Attorney General of Wisconsin was called on to render an opinion with respect to the legality of such operations, and that opinion concluded as follows:

"Offhand, it is likely to appear that a competent adult may legally consent to be sterilized, not merely as a curative or preventive therapeutic, but solely to prevent procreation. I do not say that he or she may not, but there is sufficient contraindication in the law and in the disclosed attitude of some judges, to cause one to advise physicians that it is unwise for them to perform such an operation for sterilization purposes alone.

"Sterilization has not been received by the courts with any open-armed welcome. Against the opposition of those of the public and on the courts who consider such interference with nature to be immoral or sinful, legislatures have so far made no great strides, and a great deal of what has gotten past the opposition in legislatures has succumbed in courts.

"Even if we assume that the scientific and sociological view should prevail, nevertheless the law follows science, in some fields by perhaps a generation, for the law can reflect the advances of sciences only when they have been accepted by the people generally. Science may have a duty to educate the law, but it has no duty to defy it, nor to take a serious chance with it. The consequences to a physician from the performance of an operation of this kind, should the courts hold it illegal, could be serious. Until the law is settled, it is not prudent for a physician to perform a sterilizing operation except within the ancient field of surgery, viz., when it is a therapeutic measure.

"And if the poor relief officials should, as you suggest in your letter, become parties to the performance of such an operation, they, as well as the physician, would be liable to penalties of the criminal law in case the courts should follow the letter of the old common law and hold that change in the application thereof can be only by legislative action.

"It is not my intention in this opinion to take any position upon the religious and sociologic phase of the question. It is my personal and official opinion, however, that the legal question is better to be settled in the legislature than in the courts with some well-intentioned public official or physician as the potential victim." *(21 Atty. Gen. 940.)*

In "Hospital Organization and Management," by Malcolm T. MacEachern, M.D. (The Physicians' Record Company, Chicago), operations to produce sterility are discussed on page 787 as follows:

"The question of sterilization must also receive consideration. Until recently sterilization without pathologic indication was absolutely prohibited, but there appears to be a tendency at the present time to sterilize at the request of the patient, a practice which is to be deprecated. The ordinary means used in contraception do not concern the hospital but permanent sterilization does. It can be carried out only in the hospital and it involves the whole future life and marital relations of the patient. No hospital should ever allow a sterilization to take place in its operating rooms unless it is absolutely unavoidable or there is definite and strong pathologic indication. Consultation must be a prerequisite."

URINARY INCONTINENCE IN PARAPLEGIC PERSONS AND THE AGED

To the Editor:—I should appreciate knowing how to treat urinary incontinence in paraplegic, aged and other uncooperative patients. I wish particularly information as to whether indwelling catheters, attached urinals or similar devices are of any avail. In nursing homes and hospitals for chronically disabled persons, this is a big problem. M.D., Illinois.

ANSWER.—Urinary incontinence in patients with paraplegia may be due to overflow from a bladder obstructed by dysfunction of the bladder neck. This condition can often be corrected by transurethral removal of obstructing tissue and spastic contraction at the bladder neck. In many cases the removal of only a small amount of tissue will restore normal bladder function. Cystoscopic examination usually will reveal the obstructing tissue, although in some cases it may be difficult to visualize before resection. Although the general condition of the aged or paraplegic patient may be such that any surgical procedure may seem inadvisable, the successful results and low mortality rate following resection usually justify its trial (Emmet, J. L., and Dunn, J. H.: Transurethral Resection in the Surgical Management of Cord Bladder, *Surg., Gynec. & Obst.* **83**:597, 1946). Although suprapubic drainage may seem preferable in some cases, the risk often is greater than with transurethral resection. If surgical treatment for retention is inadvisable, some other form of urinary drainage may be indicated. A catheter fastened in the urethra may irritate and, unless frequently changed, can cause urethritis or paraurethral abscess. When incontinence is present without retention the old procedure of wearing an indwelling catheter of the Foley type with day and night rubber urinal attached to the leg often has proved satisfactory. The Cunningham urethral clamp has often proved to be preferable and should be tried.

HOUSE DUST ALLERGY

To the Editor:—A patient, moderately sensitive to house dust, contemplates the purchase of either an attic exhaust fan or a small air conditioner for his home. Since both of these involve forced circulation of air, what effect, if any, is to be expected on this patient's allergic condition? And which of the two would be more advisable from this point of view? M.D., New York.

ANSWER.—Since the source of house dust allergy is chiefly in objects in the home (mattresses and furniture), any measure designed to remove dust from the outdoors will not have appreciable effect. An attic fan could not possibly improve the situation, nor would an air conditioner help under ordinary conditions. If the conditioning (filtering) system could be effectively arranged to recirculate the room air and to filter it some benefit might be possible. The patient's bedroom might be made as dust free as possible, the mattress and pillows being inclosed in dust-proof casings and upholstered furniture being removed from the room. The rest of the home should be kept as free from dust as practicable. Under such conditions a window filter in the bedroom may be useful because it can build up enough pressure to prevent contamination of the bedroom air by that from the rest of the home. If such methods fail, desensitization of the patient to house dust is advisable.

SEX DETERMINATION

To the Editor:—According to the theory of sex determination as expressed in The Journal May 28, 1949, how can one explain the results of these two experiments: A young sow bred to an aged boar farrowed 7 pigs, all females but the runt (85 per cent). An aged sow bred to a young boar farrowed an all male litter (100 per cent). I can cite numerous instances but these are the most outstanding.

D. J. Underwood, M.D., Parkville, Mo.

ANSWER.—All available evidence indicates that the sex of a mammal is determined at the time of fertilization. The sperms of a mammal are of two types, an X-chromosome-carrying type and a Y-chromosome-carrying type. These two types, it appears certain, are produced in equal numbers. In other words, half the sperm produced are X carrying and the other half Y carrying. Eggs produced are all X carrying. Accordingly, half the fertilized eggs should possess 2 X-chromosomes and, on the basis of available evidence, should develop into females, whereas the other half should possess an X-chromosome and a Y-chromosome and should develop into males. In other words, a 50:50 conception or birth sex ratio is theoretically expected.

If we assume an expected 50:50 birth sex ratio, namely, that a male or a female has a probability of half, it becomes easy to calculate the probability or chance of getting all males or all females in a litter or family of any size.

Thus it is apparent that, even though litters or families are large, some should occur, on the basis of chance alone, in which all the offspring are males or all are females.

Even though mammalian sperms are of two types and are produced in equal numbers and even though sex is determined at the time of fertilization, there is ample reason to believe that birth sex ratios may deviate from those expected according to the laws of chance. In fact there is reliable evidence that they deviate from the theoretically expected 50:50 sex ratio. For example, in every human population of fairly large size, significantly more males than females are born (United States population 48.4 per cent females: 51.6 per cent males). The explanations for such deviations are undoubtedly numerous. Some of the observed deviations are likely due to some differential effect on the two kinds of sperms prior to fertilization. Other deviations are known to be due to a differential survival on the part of male and female embryos during early stages of uterogestation.

Probabilities for Families Ranging from 1 to 10 Offspring

Litter or Family Size	Probability of All Males or of All Females Among Offspring
1	$(1/2)^1 = 1/2$ or 1 out of every 2 such families
2	$(1/2)^2 = 1/4$ or 1 out of every 4 such families
3	$(1/2)^3 = 1/8$ or 1 out of every 8 such families
4	$(1/2)^4 = 1/16$ or 1 out of every 16 such families
5	$(1/2)^5 = 1/32$ or 1 out of every 32 such families
6	$(1/2)^6 = 1/64$ or 1 out of every 64 such families
7	$(1/2)^7 = 1/128$ or 1 out of every 128 such families
8	$(1/2)^8 = 1/256$ or 1 out of every 256 such families
9	$(1/2)^9 = 1/512$ or 1 out of every 512 such families
10	$(1/2)^{10} = 1/1,024$ or 1 out of every 1,024 such families

The age of mammalian parents, which is the specific factor questioned, has been shown to be a probable explanation for some deviations. For example, the age of the female parent is known to affect the number of abortions or stillbirths, and usually this means a differential survival of males and females in utero. The age of the father has not been shown clearly to be responsible for a deviation from a 50:50 birth sex ratio, but seemingly it could be. It could presumably affect differentially the survival or fertilizing capacity of the X-carrying sperms and Y-carrying sperms and hence affect the conception sex ratio or even the early uterine sex ratio.

Although age of mammalian parents may possibly affect birth sex ratios, it seems probable that the two instances cited for the domestic pig are to be explained solely on the basis of chance. Two occurrences are not sufficient evidence to warrant recourse to any causal explanation. However, if the two cited are only two of a whole series of similar occurrences, as the author implies, some consideration of parental age would have to be taken. Certainly observations of the type indicated are worthy of tabulation and analysis. Sometimes observations of this type lead to new and important points of view.

INSULIN AND GAIN IN WEIGHT

To the Editor:—I saw a case of apparent anorexia nervosa in a white woman aged 25 who had previously been a psychoneurotic patient in a general hospital. She was extremely nervous, had lost weight, had ideas of persecution and fought with her neighbors. Her weight was 90 pounds (40.8 Kg.). She said she had never weighed over 100 pounds (45.4 Kg.). After thirty days of treatment, which included high caloric diet, iron, vitamins, folic acid, liver and psychotherapy, she continued to lose weight and became more of a problem to her family. I gave her 5 units of regular insulin forty-five minutes before each meal, and increased the dose by increments of 5 units up to 20 units three times a day. In two weeks she was taking 20 units without signs of shock following meals. One week after being on the 20 unit dose she was feeling much better, had no ideas of persecution and had gained 5 pounds (2.3 Kg.), but she noticed some tightness of her ankles and feet. Three weeks after receiving 20 units of regular insulin three times a day her feet and ankles were swollen so that she could not wear her shoes, but she was feeling wonderful and the urine did not show albumin or casts. Insulin was discontinued, and within three days her edema was gone. Can regular innsulin given to a nondiabetic person cause water retention and edema of the feet and ankles?

M. B. Sell, M.D., Augusta, Ga.

Answer.—Because of the hypoglycemic effect of insulin undoubtedly the appetite of the patient increased, she took more food, presumably more carbohydrate, protein, fat and, incidentally, more salt. Until she had the insulin her insufficient diet must have been relatively high in endogenous protein and fat and low in carbohydrate and salt. As long ago as 1769 William Stark (cited by Lusk, G.: The Science of the Elements of Nutrition, ed. 4, Philadelphia, W. B. Saunders, 1928, p. 354) called attention to the extraordinary gain in weight which followed the ingestion of a carbohydrate diet when he noticed that the weight of a patient rose "8 pounds (3.6 Kg.) in five days after changing his dietary from meat to flour." Zuntz (*Biochem. Ztschr.* 44: 290, 1912) experimentally demonstrated this point, and it was confirmed by experiment at the Nutrition Laboratory of the Carnegie Institution of Washington (Carnegie Pub. no. 176, 1912, p. 93). The experiment at the Carnegie Laboratory between April 16 and 19, 1904, showed that on a carbohydrate diet the patient gained in weight 61 Gm. per day and on a fat diet his average loss for the following three days was 914 Gm. It was estimated that water stored each day during the carbohydrate period was plus 165 Gm. and the water lost each day in the fat period was 906 Gm.

Presumably the extra food, especially carbohydrate, would not account for all the weight gain of the patient. Some of it may have been due to the salt which was taken with the diet, just as the gain in weight with von Noorden's "oatmeal cure" of diabetes was not due to the oatmeal alone, but rather to the large quantity of salt added in its preparation (10+ Gm.) and contained in the half pound of butter which was taken with it (6.3 Gm.), which caused the weight to increase 4.5 Kg. during one or two days.

It is of interest that coincidentally with insulin therapy the spell of anorexia was broken, weight increased and the psychoneurotic symptoms of the patient vanished.

PARKINSONISM

To the Editor:—A man, 51 years of age, was stricken with Parkinson's disease about two years ago. The disease progressed rapidly and now seems to be in the advanced stages. The patient has exaggerated reflexes, extreme weakness, dizziness, trouble maintaining his balance when walking or standing and mask-like expression but no tremors. His appetite has been excellent, and he has not lost weight. Roentgenograms do not reveal tumor, and his serologic reactions of the blood are negative. I assume that his trouble is due to arteriosclerosis. Occasionally he feels fine for several hours, but then his weakened state returns. Serologic reactions of the spinal fluid are negative. Can anything be done? The patient is becoming depressed. He has had all routine methods of treatment with no effect. He has had blood studies, basal metabolism tests, electrocardiogram and roentgenograms and all are normal.

Charles H. Baldwin, M.D., Atlantic City, N. J.

Answer.—The therapeutic regimen of moderately advanced parkinsonism consists of medicinal agents, physical therapy and simple psychotherapy. In addition to the alkaloids, such as stramonium, hyoscine, atropine and others of this group, used alone or in combination, diphenhydramine hydrochloride, panparnit® ([illegible] [illegible] 1-[illegible]cyclo[illegible]-1-carboxylate hydrochlor[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] found useful. Artane is a new synthetic, antispasmodic agent which relieves parkinsonism as much as, or more than, the belladonna alkaloids, and it has the advantage that it produces fewer side reactions. Physical therapy consists of the proper combination of heat, massage and exercises, active and passive, administered under the supervision of a physician trained in physical medicine. Simple reassurance and a continued interest in the patient's daily problems will be of considerable help in maintaining morale and keeping the patient active for a longer period than would be otherwise possible.

BCG VACCINATION

To the Editor:—I have read in recent reports that in some persons who previously had BCG vaccination a primary type of tuberculosis eventually developed. Please explain how a person previously sensitized, giving a positive tuberculin reaction, is able to react like an unsensitized person.

Pedro D. Martinez, M.D., México, D.F., Mexico.

Answer.—As a general rule a well established primary tuberculous infection causes complete sensitization of all the tissues of the body, so that there will be a fixation of the bacilli at the site of the localization in the lungs when a new infection occurs. Consequently there will be no lymph node complex. As a result of a small infection, however, the sensitization of the tissues may sometimes be so slight that the bacilli do not become fixed; they may proceed to the lymph nodes and produce varying degrees of lymph node involvement. The result is sometimes indistinguishable from a true primary complex. If any sensitization has existed, however, such phenomena would be technically a "reinfection complex." Without an older calcified tubercle or evidence of previously positive tuberculin reaction, such "complexes" cannot be differentiated from a true primary complex. It is entirely possible, therefore, for persons who have had BCG vaccination to experience "reinfection complexes" because of an incomplete sensitization.

PIERCING EARS FOR EARRINGS

To the Editor:—I have been requested to pierce ears for earrings. Kindly inform me of the accepted methods, and also include such information as the exact anatomic location, type of anesthesia, size and type of needle and type of suture material to be used. Should the suture material be moved daily to prevent sticking? Should the earrings be put in immediately after the suture material has been removed? How long should the earrings remain in the ears before removal?

M.D., New Jersey.

Answer.—Ear lobules may be pierced with local anesthesia after the site of puncture is marked. The location of this point will have to be determined by one's esthetic sense, which may vary with the size of the lobule, shape of the ear, design of the earrings and height of the patient. A simple method of piercing employs a piece of sterile stainless steel wire which may be twisted into position as soon as it is inserted. This may be replaced with the earrings in ten days to two weeks. Any type of suture material is likely to predispose to infection; should this occur during treatment, antibiotic therapy should be instituted. Any local infection is likely to predispose to keloid formation. Either the stainless steel wire or the metal earring should be kept in place until the tract is completely epithelialized.

GLUCOSE SOLUTIONS MIXED WITH BLOOD

To the Editor:—Is there any evidence to support the opinion that dextrose solutions, even though isotonic, should not be mixed with blood or directly precede or follow blood in a transfusion? Some workers believe that the mixing of dextrose with blood or giving it through the same tube predisposes to a reaction.

M.D., New York.

Answer.—Isotonic dextrose solution can be mixed with blood, or the dextrose solution can be administered before or after transfusions. When dextrose is added to blood, the concentration must be isotonic, or hemolysis might be produced. Dextrose solutions occasionally produce reactions, but, as far as is known, there is not an increased tendency to such reaction when they are given in conjunction with whole blood.

EFFECT OF ALCOHOL ON INSULIN

To the Editor:—If the interior of an insulin syringe is wet with alcohol, what effect will that have on insulin?

S. Richard Horio, M.D., Honolulu, Hawaii.

Answer.—Alcohol in considerable amounts might affect the action of insulin. However, if an attempt is made to force all alcohol out of the syringe and then to dry the interior by simply pushing the plunger back and forth, the amount of alcohol which remains will be too little to have any effect on the action of insulin.

PRURITUS IN DERMATITIS VENENATA

To the Editor:—Are the antihistaminic drugs of any value in relieving the pruritus which occurs in dermatitis venenata?

David L. Cooper, M.D., Erie, Pa.

Answer.—Opinion is divided in regard to the value of antihistaminic drugs in relieving the itching of dermatitis venenata. Most experienced observers have expressed the belief that the results are less than favorable and that what little benefit is derived from their use is due to the sedative effect of the drugs.

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PNEUMOCONIOSIS AND INFECTION

Chairman's Address

O. A. SANDER, M.D.
Milwaukee

The relationship of pneumoconiosis and lung infection has been the subject of much study and investigation in the past twenty-five years. Although most of these studies have concerned themselves with silicosis and tuberculosis, other pneumoconioses and other lung infections have been scrutinized more recently as to their possible relationship but with no relationship observed. I shall therefore limit this discussion largely to the silicosis-tuberculosis combination.

Nontuberculous infections, particularly the pneumonias, have been shown by numerous clinical studies and animal investigations to be no more prevalent with any of the pneumoconioses than in the population generally. Even when the patient has definite silicosis, increasing data suggest that it does not cause an increased susceptibility to pneumonia or other nontuberculous infection.[1] Moreover, the benign pneumoconioses, such as the siderosis of welders and grinders, have in my experience not been responsible for more pulmonary infections of any kind, including tuberculosis.[2] A tuberculous infiltrate has been observed to heal spontaneously in the presence of a welder's siderosis, and tuberculous animals have not shown the development of progressive tuberculosis after exposure to welding fumes.[3] It can be stated with some assurance that silicosis seems to be the only one of the pneumoconioses causing an increased prevalence of tuberculosis, and tuberculosis seems to be the only infection which silicosis affects adversely.

There exist some differences of opinion regarding the true nature of the relationship of silicosis and tuberculosis. At one extreme are those who believe that the coexistence of silicosis and tuberculosis in the same lung is entirely coincidental and that the growth of the tubercle bacillus is not stimulated by silicotic tissue.[4] At the other extreme are those who believe that every silicotic nodule is a silicotic tubercle and that silicosis cannot develop in the absence of tuberculosis.[5] There appears to be ample evidence both clinically and experimentally to refute both these points of view. The experimental evidence I shall not point out in detail except to give the references to some of this material.[6] It is my purpose in this discussion to show from clinical case records that the deleterious effect of silicosis seems to be largely on preexisting tuberculous foci and relatively infrequently as a predisposing factor to new tuberculosis.

In an original survey of over 15,000 workers in dusty trades,[7] largely from foundry and granite industries, ten times as much active tuberculosis was found among those with silicosis (3 per cent of the silicotic persons) as among those not having silicosis (0.3 per cent). There was an additional group of 19 per cent of those with silicosis who had confluent shadows demonstrated roentgenologically in whom tubercle bacilli could not be demonstrated in the sputum at the original examination; there were over 400 patients in this group. Many of them have been studied periodically over the past fifteen years and a considerable number of clinically active cases of tuberculosis have developed in this group. It was impossible for the purpose of this paper to summarize these cases statistically. Therefore 7 case records have been selected for careful scrutiny, because each represents a slightly different type of combined lesion.

REPORT OF CASES

Cases 1 and 2 (fig. 1).—Cases 1 and 2 are presented simultaneously because the dust exposure of the 2 patients was exactly the same, entirely comparable to 2 animals in the same dusting chamber. Both persons came to this country together from Italy in 1908 and started work in the same steel foundry as sand chippers with pneumatic hammers. When first examined by roentgen ray in January 1934, after twenty-six years of exposure to dust, the first patient (case 1) had well developed second stage silicosis without evidence of tuberculosis; and the second patient (case 2) in October 1933 had a comparable degree of silicosis and in addition had mottled shadows in the upper lobe of the right lung suggestive of tuberculosis. However, repeated sputum studies did not reveal tubercle bacilli. Both patients were equipped with approved filter respirators and moved to chipping jobs on previously sand-blasted castings; in other words, their exposures to dust were decidedly reduced. They were examined and had roentgenograms made at frequent intervals during the next twelve years (fig. 2). In case 1 the disease progressed little during this interval, but in case 2 there developed a massive conglomerate silicosis in both

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Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

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lungs; the patient died in December 1945 of cor pulmonale. Tubercle bacilli never were recovered from his sputum or gastric contents after repeated tests. Reaction to the tuberculin Mantoux tests in both cases was positive. The rarefied shadows on the roentgenogram in case 2 are not cavities but emphysematous areas. Postmortem examination, unfortunately, was not permitted. I feel strongly, however, that tuberculosis was the factor which was responsible for the massive fibrosis in this case, the fibrosis from the developing silicosis fortifying the fibrosis from the tuberculous infection to such a degree that tuberculous areas of caseation and cavitation never had an opportunity to develop. I know of no other explanation for the massive fibrosis in case 2 as opposed to the process in case 1, which always remained typically nodular. As a matter of fact, the vast majority of uncomplicated cases of nodular silicosis have remained so with fifteen years of observation, and only in relatively few has a superimposed tuberculosis developed.

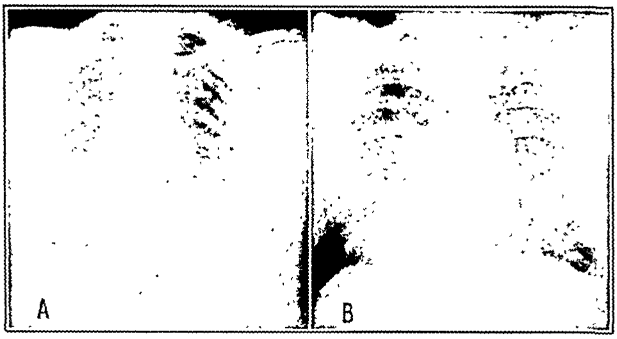

Fig. 1.—Comparison of roentgenograms of the chest of two subjects with silicosis after identical dust exposure: *A*, case 1, January 1934; *B*, case 2, October 1933.

Case 3 (fig. 3).—A man whose present age is 60 has been a molder in iron foundries for thirty years. He had borderline first stage silicosis and a healed tuberculous scar at the apex of the right lung in 1935. By 1942 there had been a slight increase in the silicosis, accumulated especially around the tuberculous scar. There was increase in the silicosis by 1944 (fig. 4). In addition he had bronchopneumonia in the lower lobe of the right lung in October 1944, which resolved promptly. In my experience, resolution of pneumonia is not more delayed in workers with silicosis than in other workers. However he was removed from the foundry after this illness and given a job as helper in the carpenter shop. By 1947 (fig. 5) there was further increase in nodulation, despite no further exposure to dust, and increased density and spread of upper lobe lesions without cavitation. Further changes have not occurred in the past two years. Sputum or gastric culture was always sterile, and the sedimentation rate was always normal except during pneumonia. The patient has no symptoms and is working daily on a nondusty job.

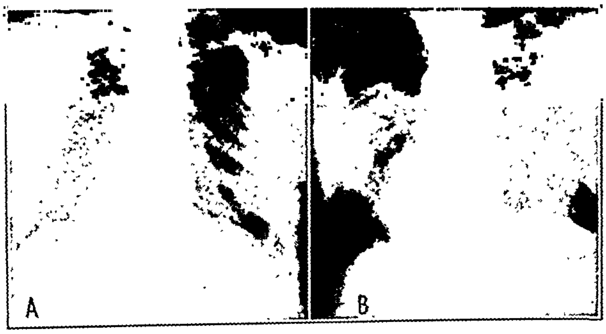

Fig. 2.—Variation in progress of disease in case 1 (*A*) February 1946 (little progress) and case 2 (*B*) November 1945 (massive conglomerate silicosis).

This case is typical of silicosis which results in excessive fibrosis around apparently healed tuberculous foci. Such fibrosis never is as dense as when the tuberculosis also is laying down fibrous tissue. In this case, as in many, it cannot be stated positively that the tuberculous foci are healed and never will reactivate. That is the classification given this case, however, because of lack of appreciable progression of the disease in fourteen years and because of persistently normal blood sedimentation rates.

Case 4 (fig. 6).—A man whose present age is 60 had been a chipper for fifteen years in a steel foundry when he was first examined in 1933. He already had second degree silicosis and conglomerate shadows in the upper lobes of his lungs. He was equipped with a respirator and moved to a cleaner job. Increase in nodulation and conglomerate shadows was observed roentgenologically by 1939. All sputum cultures were sterile, and the blood sedimentation rate was normal. By 1945 (fig. 7) he had a pronounced increase in nodulation and in conglomerate shadows of the upper lobes of the lungs. Since 1942 he has had a rapid blood sedimentation rate. Sputum and gastric cultures are always sterile. He was removed from the foundry altogether in 1945, and he stopped work entirely in 1946 because of dyspnea, weakness and cough. He has been receiving compensation for total disability since then. A further increase of conglomerate shadows was evident in the roentgenogram by 1949, but without evidence of cavity. The sedimentation rate is rapid, but he still has sterile sputum and gastric cultures. Sanatorium care is not recommended.

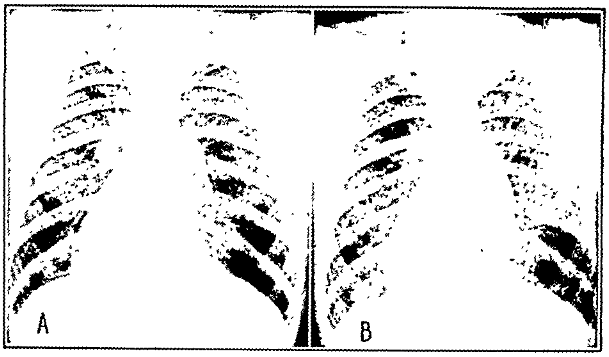

Fig. 3 (case 3).—Borderline first stage silicosis and a healed tuberculous scar at apex of the right lung (*A*, May 1935); slight increase in silicosis, especially around tuberculous scar (*B*, April 1942).

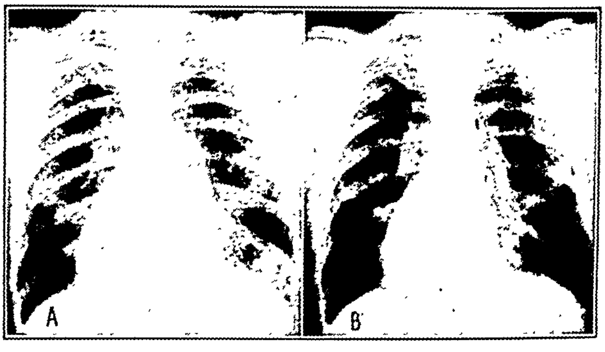

Fig. 4 (case 3).—Increase in silicosis (*A*) by Oct. 11, 1944, and bronchopneumonia (*B*) in the lower lobe of the right lung, Oct. 23, 1944.

This case has been classified as a typical silicotuberculosis which is progressive and most likely pathologically active. A sputum or gastric culture exhibiting growth of tubercle bacilli may be expected at any time in the future. The shift from a normal to an increased sedimentation rate has been a significant sign of pathologic activity of such a silicotuberculous process in my experience. However, because of the dense fibrotic barrier, tubercle bacilli may not be liberated in the bronchial tree for many more years. The vast majority of combined lesions which have been observed have been of this slowly progressive type.

Case 5 (fig. 8).—A man whose present age is 44 had been a chipper in steel foundries for sixteen years when seen in 1938 with first degree nodular silicosis but no evidence of tuberculosis. He was shifted to a less dusty part of the plant and equipped with a filter respirator. Roentgen examination disclosed an infiltrate in the lower lobe of the right lung in 1945, and sputum tests revealed tubercle bacilli. The patient was in a sanatorium nineteen months; the sputum became sterile after cauterization of a tuberculous bronchial ulcer. The man returned to work in December 1947 (fig. 9); all evidence of tuberculosis in the lower lobe of the right lung had disappeared. He was given an entirely nondusty job in the warehouse. A recent roentgenogram is suggestive of a new tuberculous lesion in the upper lobe of the left lung. Sputum examinations do not disclose tubercle bacilli, but the blood sedimentation rate has been rapid since 1945 and no improvement is evident now.

This type of case is in the minority, and the data suggest that the tuberculous lesion in the right lung developed as a superimposed reinfection. It is possible that a chronic silicotuberculosis is now developing in the left lung, which will be observed at frequent intervals in the next five to ten years. In the meantime, the man will continue to work at his nondusty job in the warehouse.

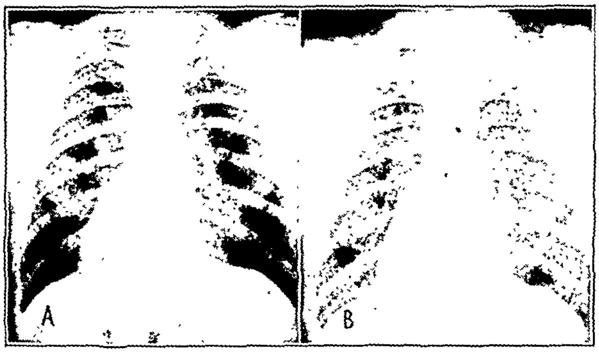

Fig. 5 (case 3).—Further increase in nodulation (*A*, August 1947); no further changes (*B*) in May 1949.

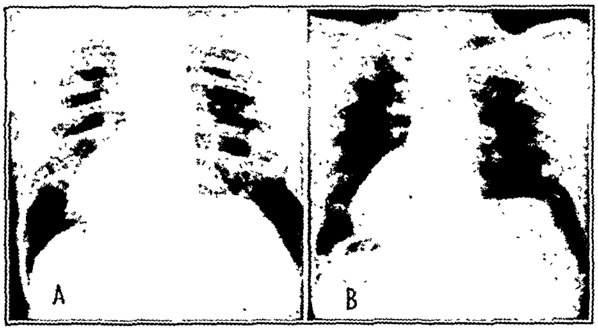

Fig. 6 (case 4).—Second degree silicosis and conglomerate shadows in the upper lobes of the lungs (*A*, March 1933); increase in nodulation and conglomerate shadows (*B*, September 1939).

Case 6 (fig. 10).—A man aged 64 at present, had been a crane operator in a steel foundry over thirty-eight years. He had first degree nodular silicosis in 1936, with a tuberculous lesion probably caused by reinfection in the upper lobe of the right lung; the lesion showed no evidence of clinical activity at that time (normal blood sedimentation rate and sterile sputum). By 1943 the process had increased to second degree nodular silicosis, and roentgenograms showed a spread of infection in the upper lobes of both lungs (now rapid blood sedimentation rate, but still sterile sputum and gastric cultures after repeated tests). By October 1946 there was a decided increase in infection shadows in the left lung, with cavities. The sputum culture was now positive for growth of tubercle bacilli. The man was in a sanatorium for the next two years (fig. 11). The sputum became sterile, and the cavity on the left disappeared after routine sanatorium care. The blood sedimentation rate was still exceedingly rapid. The man returned to work in April 1949; he was placed in a nondusty department on a light job.

This case still is classified as pathologically active silicotuberculosis in spite of the sputum conversion, and further progression of the conglomerate fibrosis in both lungs is expected in the next few years. In a number of such cases, the patients have received streptomycin in the course of their sanatorium treatment, without more encouraging results than those obtained in case 6. As with chronic fibroid tuberculosis in the absence of silicosis, the infection seems to be held in abeyance only during the course of the streptomycin treatment. It does not appear at this time that streptomycin therapy or routine sanatorium care has much to offer in helping to arrest a slowly progressive silicotuberculous process.

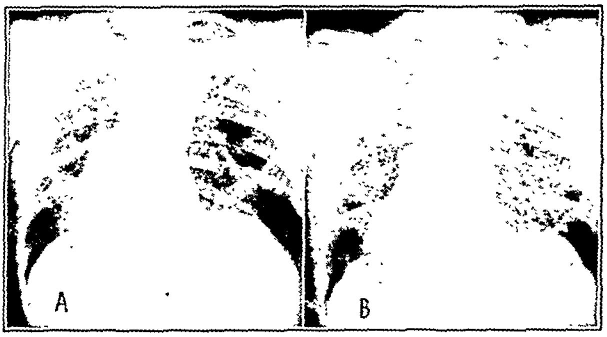

Fig. 7 (case 4).—Increase in nodulation and conglomerate shadows (*A*, April 6, 1945); further increase in shadows but no evidence of cavity (*B*, Jan. 4, 1949).

Case 7 (fig. 12).—A man who was aged 61 at the time of his death in 1940 had been a molder for thirty-three years. Roentgen examination revealed borderline nodular silicosis in August 1940 and indefinite mottled shadows in the upper lobes of the lungs. The blood sedimentation rate was slightly increased. One concentrated sputum smear did not exhibit growth of tubercle bacilli. In October 1940, acute respiratory symptoms developed and acute miliary tuberculosis was found in both lungs. The sputum contained tubercle bacilli. The man died five days after the roentgenogram was made (October 15). Postmortem study showed widespread miliary tuberculosis not only in the lungs but in the liver and spleen. The only caseating focus from which these large numbers of bacilli could have spread was found in a tracheobronchial lymph node at the root of the right lung. These nodes also were silicotic, making the relationship undeniable. The amount of nodular silicosis in the lung itself was slight and had nothing whatever to do with the spread of the tuberculosis.

I have seen only 1 other case with such blood stream and bronchogenic spread from a silicotuberculous lymph node. It seems surprising that spread does not occur oftener, because both silicosis and tuberculosis develop first in these nodes and may develop side by side. Its rarity suggests that tuberculous foci in the lymph nodes at the root of the lungs have become sterile in most cases by the time silicosis develops in adult life, bearing out the observations of Feldman and Baggenstoss[8] that viable tubercle bacilli are found only rarely in the calcified root nodes of adults.

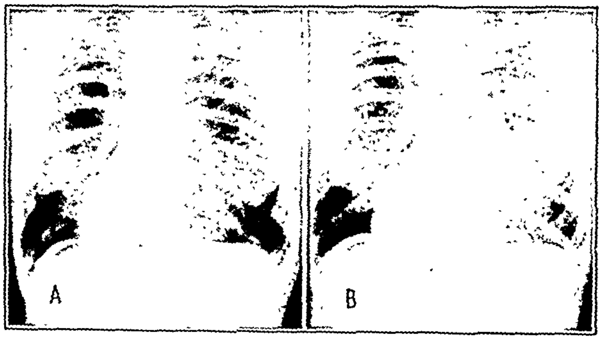

Fig. 8 (case 5).—First degree nodular silicosis (*A*) in June 1938; infiltrate in the lower lobe of the right lung (*B*) in October 1945.

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[8] Feldman, W. H., and Baggenstoss, A. H.: The Residual Infectivity of the Primary Complex of Tuberculosis, Am. J. Path. 14: 473, 1938.

COMMENT

Unfortunately, too few of the most interesting silicotuberculosis cases have had postmortem study to be of statistical value. It can be stated, however, that the majority of the posted cases in which the disease was diagnosed during the life of the patient as silicotuberculosis did show some evidence of tuberculous tissue on postmortem study. In such cases there was usually a rapid blood sedimentation rate for many years before death and progressive changes were observed on serial roentgen study over a twelve to fifteen year period.

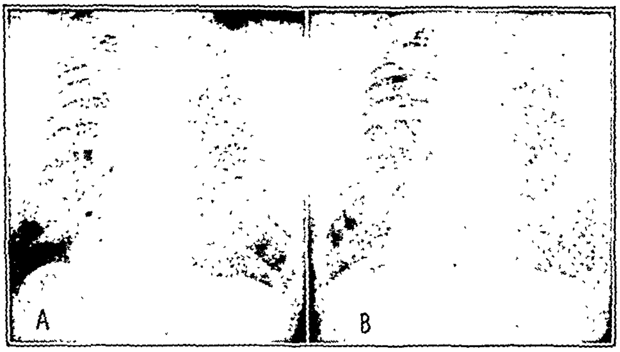

Fig. 9 (case 5).—Healed right lung (*A*) Dec. 4, 1947; suggestion of new tuberculous lesion (*B*) in the upper lobe of the left lung May 17, 1949.

In spite of this apparently close relationship between silicosis and tuberculosis, only a small percentage of workers with silicosis actually are dying of tuberculosis today. Actual figures cannot be given from the group which I have studied, but it is more in the range of 5 to 10 per cent instead of the often quoted 75 per cent, and the majority of those cases were of long-standing combined lesions. Superimposed tuberculosis on a previously uninfected silicotic lung still occurs occasionally but is becoming increasingly rare. There is far less fear that uninfected silicotic workers will contract tuberculosis today than there was in the past. They are carrying on full time work without impairment. Such a program necessitates prevention of contact exposure with persons who have active tuberculosis within the plant and in the home, including periodic examinations of all fellow workers as well as those with silicosis. Persons with silicosis are being educated in the protection of their health and are being reassured that chances of the development of superimposed tuberculosis are remote. Such reassurance is considered a major factor in the mental well-being and continued productivity of such workers.

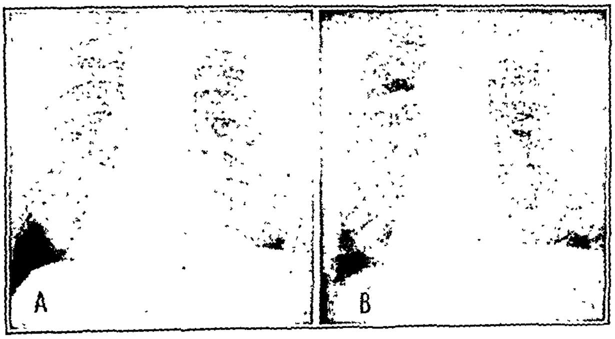

Fig. 10 (case 6).—First degree nodular silicosis (*A*, May 21, 1936); second degree nodular silicosis (*B*, Aug. 25, 1943).

SUMMARY

Several important conclusions regarding pneumoconiosis and infection are drawn from the clinical observation of these cases.

1. Pulmonary tuberculosis is the only infection which appears to be more prevalent in persons with silicosis than in other workers.
2. The effect of the silicosis is primarily on preexisting tuberculous foci. If these are pathologically active, the silicosis tends to keep them active and to prevent healing, resulting in later slow spread of the combined lesion.
3. Such lesions usually are more chronic than is tuberculosis alone, and they slowly progress with excessive overgrowth of fibrosis, tubercle bacilli not being liberated in the bronchial tree for many years and occasionally never.

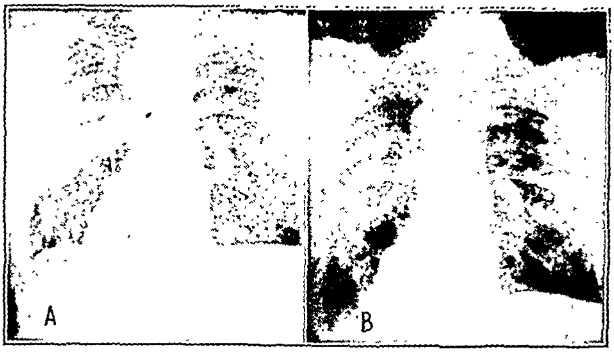

Fig. 11 (case 6).—Increase in shadows and cavities of left lung (*A*, Oct. 14, 1946); continued evidence of active silicotuberculosis (*B*, April 12, 1949).

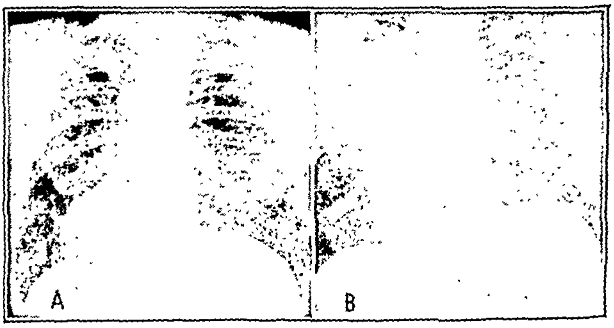

Fig. 12 (case 7).—Borderline nodular silicosis and indefinite mottled shadows in upper lobes of lungs (*A*, Aug. 17, 1940); acute miliary tuberculosis in both lungs (*B*, Oct. 15, 1940).

4. Sanatorium care not only is unnecessary but inadvisable until the sputum or gastric contents show tubercle bacilli.
5. Streptomycin appears no more effective in halting the progression of silicotuberculosis than it does in chronic tuberculosis without silicosis.
6. Persons with clinically inactive silicotuberculosis should be kept at work in nondusty atmospheres or at jobs where dust dissemination is well controlled. Such work, of course, should be within the limits of their physical capacity if they are partially disabled.
7. They should have frequent periodic examinations, at least every six months, including sputum and gastric cultures for tubercle bacilli.
8. The blood sedimentation rate is particularly indicative in conjunction with these periodic examinations. A significant increase in the rate which had been normal should make one suspect a developing pathologic activity of the walled-off infection.

9. The decided reduction in the past ten years of the dust exposures in the dusty trades is having a profound effect on the development rate of silicosis and silicotuberculosis, to the extent that today new cases of silicotuberculosis are no longer seen except in the older workers who were exposed to the heavier dust concentrations in the past.

10. The increasing discovery and isolation of persons with active tuberculosis in the community as well as in industry also is helping to prevent new cases of silicotuberculosis to such an extent that it soon will cease to exist as an occupational disease.

11. The pessimism of the past regarding the prognosis of silicosis should be replaced by a more optimistic outlook in the vast majority of cases, and those affected should share in that optimism.

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SILENT PHASE OF CANCER OF THE LUNG

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Fate has challenged physicians in a peculiar way with respect to primary cancer of the lung. The problem is magnified by an astounding increase in numbers, yet it is simplified by facilities for early detection. In fact, of all internal cancers, those originating in the lung should be the most readily discovered while still locally confined. The lesions not only can be found but can be properly labeled. Excision of the cancer-bearing lung has been shown to be feasible, relatively safe and effective. Therefore physicians have the tools with which to find, label and successfully treat cancer in this location.

EXTENT OF PROGRESS

Cure of cancer of the lung was never seriously considered prior to 1933, when total excision of the lung was shown to be possible. During subsequent years, correlated studies of symptoms, roentgenographic shadows, bronchoscopic observations, cellular elements of sputum and surgically detected pathologic conditions have been made. Much is now known as to the life history, direction of spread and variabilities of the several histologic types of cancer of the lung. Sufficient time has elapsed to find from the literature a mounting list of recorded five year cures. It has been shown that cure rates are high if the patients submit to pneumonectomy at a time when there is no demonstrable growth outside the lung. We recently reported [1] that in the early phase of thoracic surgery (1933 to 1943) 40 per cent of such patients lived five years or more (table 1). Nor is this all—those patients who were saved by pneumonectomy have been able to enjoy life and have taken a productive position in society.

Although there have been some brilliant cures, thoracic surgeons are distressed to learn from a study of their own statistics that only a small percentage of the patients coming to them for benefit can be helped. In our own experience, of a total of 721 patients, only 9 per cent presented themselves for treatment when the growth was still confined to the lung (table 2). It is perfectly clear that even if the risk of surgical treatment is reduced to zero, it will be impossible to show any significant change in cure rate until something is done to substantially raise the percentages of patients with locally confined cancers in the group presented for consideration of pulmonary resection.

THE TIME ELEMENT IN DIAGNOSIS

Since cancers are growths, all extensive lesions were at one time small and localized. The presence of the growth factor presupposes a time factor. To eliminate all delay in the discovery of any cancer is, of course, essential. The average patient waits three months after the onset of symptoms before seeking advice. The record then shows that, by the orthodox methods physicians use to sort out patients with cancer of the lung from those with other conditions, there is another seven months' delay. The loss of ten months after onset of symptoms, which is the rule now, is only slightly less than that which existed in an earlier period (1932-1940), when the average delay was 11¾ months.

Table 1.—*Primary Carcinoma of the Lung, 1932 to 1943*

		Operative Mortality	
		No.	%
Total Cases			234
Verified		190	
Unverified		44	
Explored	58	9	15.5
Resected	41	9	21.9
Total thoracotomies	99	18	18.1
		Five Year Survival	
Resections			
Without extrapulmonary extension		20	8 } *
Lymph node extension only		10	2 } *
Gross extension		11	0

* 4.3 per cent of all cases seen; 5.3 per cent of all verified cases.

Why has the time schedule been so prolonged? There are four principal reasons:

1. The first and only symptom is usually nothing more than cough. This is hardly a warning, because cough is such a part of the life of every one.
2. The stethoscope is unreliable because abnormal physical signs are either nonexistent or the same as those encountered with any common chest ailment.
3. Secondary infection is frequent during the symptom phase and becomes a "red herring" leading to misdiagnosis and misdirected treatment, usually for recurring colds, chronic bronchitis or virus pneumonia.
4. Abnormal areas of density as found in the conventional roentgenogram of the chest are extremely variable because of bronchial occlusion of the segmental or subsegmental bronchi (fig. 1). The anatomic arrangement of the pulmonary segments permits a wide range of possible shadows, depending on the relative position and superimposition of the aerated to unaerated segments.

Since the orthodox method of case finding depends on a lesion extensive enough to produce symptoms, and since the signs are so variable and confusing, it is obvious that delays in definitive treatment are bound to occur. The same situation developed in regard to case findings in tuberculosis. By depending on a warning symptom, visits to the physician, therapeutic trials and eventually the true diagnosis, the disease in about

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Read before the Section on Diseases of the Chest at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

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[1] Overholt, R. H., and Schmidt, I. C.: Survival in Primary Carcinoma of the Lung, New England J. Med. **240**: 491-497 (March 31) 1949.

85 per cent of all persons with tuberculosis had progressed to advanced stages. Case finding of the presymptomatic or silent lesion by the mass survey method has reversed the ratio of minimal to advanced cases, and a yield of 85 per cent of minimal cases are discovered.

DETECTABILITY OF CANCER OF THE LUNG

Cancer of the lung has a silent phase and is detectable. The air within the expanded lung provides a natural, ever present contrast medium for the detection of changes in density. Small tumors growing in the periphery will cast a direct shadow. Smaller tumors centrally located cause a subsegmental or segmental bronchial obstruction, which will cast a shadow of the corresponding atelectatic segment (fig. 2). An airless segment will cast a shadow many times the size of the shadow of the tumor itself; thus there is actual magnification of centrally placed lesions which represent the great majority of all pulmonary cancer. This is fortunate, as small tumors within the pulmonary hilus might otherwise escape detection because of the grouping of normal bronchial and vascular shadows in this area.

TABLE 2.—*Primary Carcinoma of the Lung from 1932 to September 1949*

Total Cases *		721
Verified	569	
Unverified	152	
Exploratory operation only	142	
Resections	200†	

* Does not include 34 patients treated by resection for tumors diagnosed as bronchial adenoma, infiltrative bronchial adenoma or malignant adenoma.

† Of these patients, 191 had symptoms, and the mortality within 60 days of operation was 19 per cent. Nine of these patients were symptom-free and the lesions were discovered in surveys. The operative mortality was zero.

The case-finding program in tuberculosis is already beginning to perform a double service, as the incidental finding of silent cancer has shown. Patients with suspicious abnormal areas of density apparent in a survey film have been observed; on exploratory operation these densities sometimes prove to be cancer. In the Minneapolis Survey[2] satisfactory examinations were made in 301,513 persons (May to August 1947), and in 2,152 cases abnormal shadows were detected that were not explained on the basis of tuberculosis. Data on the follow-up of these cases is incomplete, for only 65 per cent were reported back to the health department. However, Gunlaugson[3] has stated that studies have to date been made in 1,108 instances and the following tumors have been discovered: primary cancer 6 cases, secondary cancer 9 and not stated 12; Hodgkin's disease 4 cases, and nonmalignant intrathoracic tumors 19, a total of 50 cases. It has been concluded from the Minneapolis experience, according to Hilbish,[4] that 10 primary cancers of the lung for every 100,000 persons examined will be close to the probable yield.

From Seattle, Spielholz[5] has reported that of 400,000 survey roentgenograms, 261 of the confirmatory 14 by 17 inch (36 by 43 cm.) roentgenograms were interpreted as indicative of possible neoplasm. Follow-up is at present incomplete, but adequate information in 107 instances has shown the following yield: primary carcinoma 8; metastatic carcinoma 13; other primary malignant thoracic growths 1; benign tumor 6; malignant lymphoma 7; thyroid 9; nonneoplastic 43, and growths requiring continued observation 20.

Hilleboe[6] has reported that during 1938 the Division of Tuberculosis Control in a program in Upstate New York found in 75,774 survey roentgenograms 910 significant nontuberculous lesions; of these, 39 were interpreted as being due to tumor.

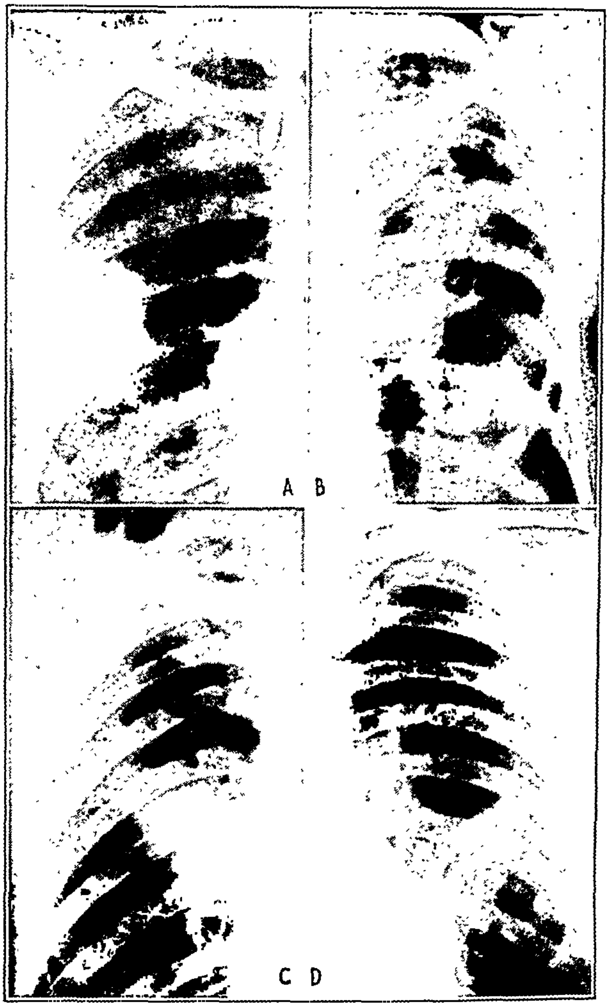

Fig. 1.—Variability of shadows produced by cancer: A, an epidermoid carcinoma, grade 3, which had invaded the chest wall of G. B., a man aged 50. Resection of the lung and a wide area of chest wall was performed July 26, 1944. The patient is now well. He contracted tuberculosis in 1921 and had been under observation since that time. Review of serial roentgenograms revealed that first evidence of the shadow was apparent nine years prior to surgical treatment. *B,* silent lesion discovered in survey in McM., a man aged 56. Exploratory operation revealed a small localized cancer in the posteroapical segmental bronchus with atelectasis of the segment. A pneumonectomy was performed Dec. 30, 1948. *C,* lesion discovered during gastrointestinal fluoroscopic examination of C. G., a man aged 67. Exploratory operation revealed cancer of the anterior segmental bronchus, and the lung was successfully removed May 21, 1948. *D,* lesion discovered in routine roentgenogram of T. N., a man aged 45. One year previously he had extensive abscess in the upper lobe of the right lung, which required lobectomy. The shadow in the left lung was discovered when he returned for annual check-up. It proved to be an epidermoid grade 2 carcinoma and was locally confined to the posterior basal segment. The resection performed Dec. 16, 1948 was limited to the lower lobe, since the patient had lost the contralateral upper lobe a year previously.

Hilbish[4] stated in the Washington, D. C. survey program that of 350,000 satisfactory examinations, 373 were considered suggestive of tumor; 38 of the 373 have so far been proved to be malignant.

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[2] Report of Minneapolis X-Ray Survey Committee, 1947, pp. 36 and 39.

[3] Gunlaugson, F. G.: Personal communication to the authors, April 29, 1949.

[4] Hilbish, T. F.: Personal communication to the authors, April 18, 1949.

[5] Spielholz, J. B.: Communication to John E. Dunn Jr., United States Public Health Service, Feb. 15, 1949.

[6] Hilleboe, H. E.: Personal communication to the authors, April 22, 1949.

Although the incidental discovery of cancer in tuberculosis survey programs has not produced startling figures, the follow-up of all suspect cases has been incomplete. However, another way to illustrate the value of routine roentgen screening of the chest is to look backward from records of a treatment center. For example, at the Memorial Hospital in New York Watson[7] has reported that between 1940 and 1948, 104 silent tumors were referred for treatment and, of these, 41 proved to be malignant and 63 benign. In our own practice, 65 asymptomatic patients in whom a diagnosis of tumor was made have been referred for treatment. Of these, 19 growths were found to be malignant and 35 benign; in 10 instances the diagnosis remained undetermined histologically. The resectability rate in the malignant group was 79 per cent. Roentgenograms of 4 patients are shown in figures 3 to 6.

THE LENGTH OF THE SILENT PHASE

Rates of cancer growth vary, but there are isolated instances in which the existence of abnormal shadows was apparent for several years and yet on surgical exploration the lesion was found to be apparently localized. For example, in 1934 G. B. was found to have an abnormal area of density which persisted for nine years. When an exploratory operation was performed in 1943, a resectable cancer was found. He is living and well today. In another case, E. B., a man aged 64, had a silent shadow which was observed for seven years, and a localized cancer was found on surgical exploration (fig. 5). Exploratory operations in cases of silent lesions also have been known to reveal extensive metastases. This in no way mitigates the value of screening unless recent roentgenograms which antedated the discovery of the silent lesion were normal. If the survey roentgenogram represents the first and only roentgenogram the patient ever had taken, who will deny that, if the person had been having annual examinations previously, cancer in an operable stage probably could have been discovered (fig. 6). It is impossible to say how often patients should be screened in order to give reasonable protection from cancer of the lung. As further experience develops, this point can be determined. For the present, selective screening on an annual basis would seem to be wise. The highest yield will be among men over 45 years of age.

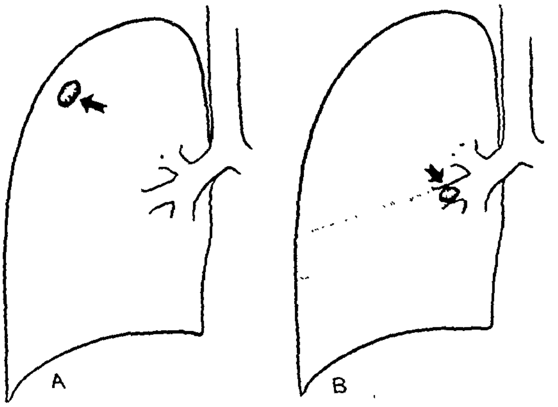

Fig. 2.—The basis for asserting that a survey roentgenogram will show silent cancer: *A*, in the periphery a small tumor casts a direct shadow in contrast to rarefied lung field; *B*, in stem bronchus a small tumor casts a shadow of segmental or subsegmental atelectasis. This shadow is therefore indirect, yet it greatly magnifies the actual size of the tumor.

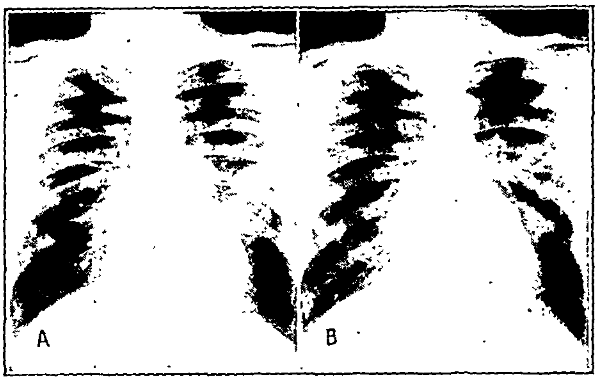

Fig. 3.—Case illustrating delay of nine months, yet cancer still was localized: Roentgenogram of B. W., a man aged 64, taken (*A*) May 28, 1948 and (*B*) Feb. 3, 1949. Chronic cough was the only symptom. He was treated for virus pneumonia in January 1949. Bronchoscopy and sputum tests revealed normal conditions. An exploratory operation revealed cancer of the anterior segmental bronchus. Pneumonectomy was successfully performed March 5, 1949.

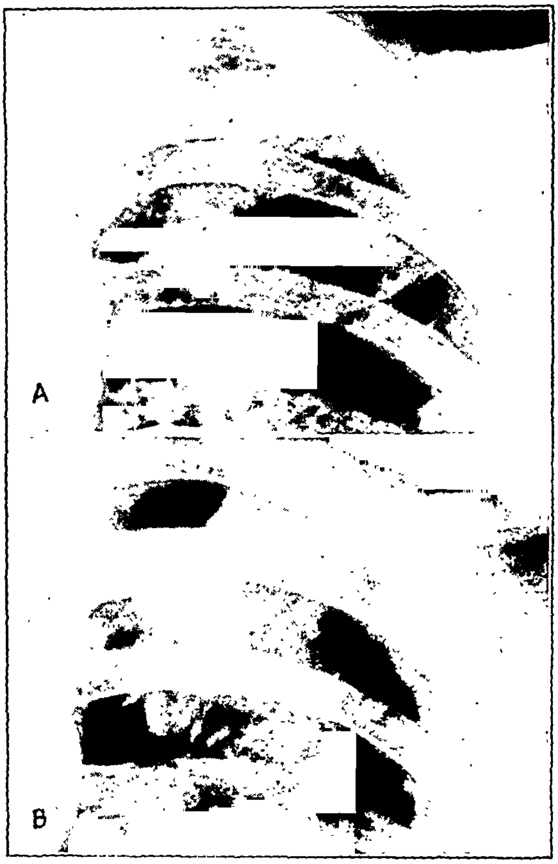

Fig. 4.—Case illustrating observation of two years, yet cancer was still localized in D. H., a man aged 60: *A*, left apex of lung from roentgenogram made April 9, 1947 in a routine hospital survey when the patient was in for treatment of sinus. Serial roentgenograms for two years revealed gradual enlargement of the shadow (*B*, Feb. 16, 1949), but the man remained symptom free. At operation, April 23, 1949, a localized cancer of the left posteroapical segment was found and successfully removed by pneumonectomy.

NEED FOR PROPER LABELING

Screening the whole population and spotting abnormal pulmonary densities is the first step. Prompt and adequate investigation of suspects is equally important.

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[7] Watson, W. L.: Personal communication to the authors, March 10, 1949.

Additional information can be obtained by: (1) positional, stereoscopic, tomographic roentgenologic studies; (2) cytologic examination of sputum; (3) bronchoscopy, and (4) exploratory thoracotomy. Negative sputum or negative bronchoscopic examination does not prove the nonexistence of cancer. If the abnormal roentgenologic density cannot be explained with reasonable certainty on any other basis, surgical exploration should be advised. Fortunately, today this can be done with safety. With the chest open[8] and the lung under direct inspection and palpation, the lesion which caused the abnormal shadow can be readily located.

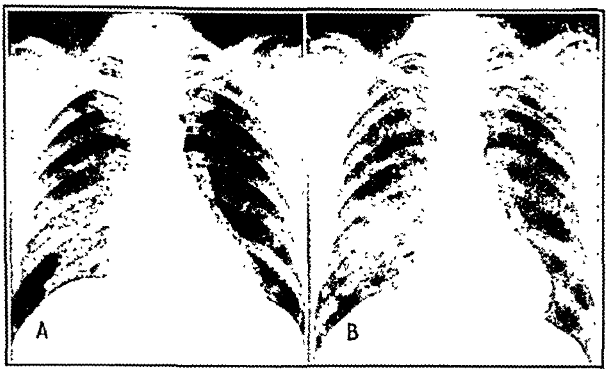

Fig. 5.—Case illustrating observation of survey lesion for seven years. Hospital survey roentgenogram (*A*) was taken March 22, 1941, when the patient was under treatment for multiple thrombosis of the leg. Serial films over a period of seven years revealed little change in the shadow (*B*, April 9, 1948). Bronchoscopy was negative. An exploratory operation revealed localized cancer of the lower lobe of the right lung, and resection was successfully performed May 12, 1948.

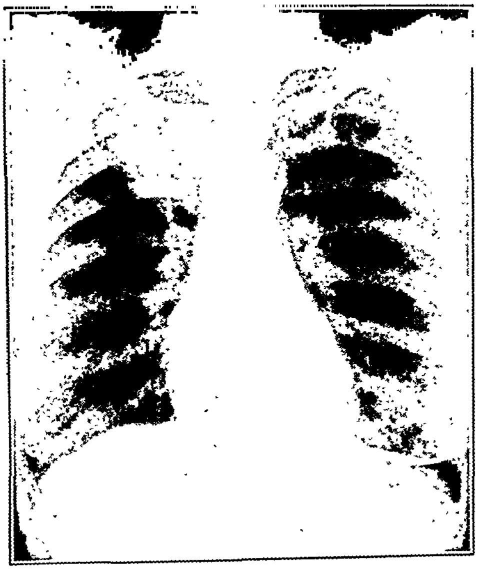

Fig. 6.—Case illustrating survey lesion found in asymptomatic patient C. B., a woman aged 56, in January 1948. Treatment was prompt, but the cancer had already invaded the mediastinum. Only a palliative resection could be performed (Jan. 29, 1948). This was the only roentgenogram the patient ever had. It is probable that a survey film one, two or three years previously would have detected the lesion when it was still growing locally.

Lesions near the surface and many in the hilar area can be directly biopsied. If the lesion is located centrally, within a segment or subsegment, and direct biopsy is considered not to be technically easy, then the segment or subsegment bearing the mass should be removed. The ability to utilize any one of the eighteen segments, certain subsegments, or combinations of both as units of excision permits maximum conservation of lung until the diagnosis of cancer is established histologically. If the identity of the lesion was known prior to the exploratory operation (positive bronchoscopic biopsy or smear of bronchial secretions), or the diagnosis has been established at surgical exploration, the surgeon proceeds with total resection of the lung and unilateral dissection of the mediastinal lymph nodes. In rare instances in elderly patients with low reserve or when previous disease has destroyed part of the contralateral lung, it may be necessary to limit the excision to a lobe or segment. However, the best cancer operation, here as elsewhere, is one which follows the principle of the widest possible excision of the cancer-bearing organ with all the regional lymphatic vessels.

CONCLUSIONS

1. Orthodox methods of case finding based on symptoms, visits to the physician and the time interval usually employed for serial roentgenograms and differential diagnostic maneuvers have produced a low yield of localized pulmonary cancers.

2. A silent phase of cancer of the lung exists and is detectable by periodic radiologic screening. Survey methods developed for tuberculosis case-finding may do a double service. The highest yield of silent cancer will be found in the male population of 45 years and over.

3. The labeling of survey-found abnormalities must be prompt and exact. Although time lags in tuberculosis follow-up may not prove to be fatal, if cancer occurs time lags may cost patients their lives.

4. Surgical exploration in cases in which cancer is suspected will establish the exact diagnosis and will permit immediate excisional therapy, which for most will be curative.

1101 Beacon Street.

ABSTRACT OF DISCUSSION

Dr. John E. Dunn Jr., Washington, D. C.: Before the feasibility of the mass chest roentgenogram survey technic for case finding in cancer of the lung is considered, an important difference between the problems of tuberculosis and cancer should be noted. In tuberculosis a single case-finding survey of a population, theoretically at least, can be expected to have a definite and sustained effect on the extent of the problem if all patients with infectious and incipient tuberculosis are given proper treatment, thereby removing potential and actual sources of secondary infections. A similar survey of a population for pulmonary cancer has no lasting value of this kind, since in the course of a few months the problem has recurred to its original extent. In other words, any cancer case-finding method must be a repetitive procedure for the population considered to be at risk. The response to mass surveys for tuberculosis is best in the younger portion of the adult population, while in the older age groups, in which cancer of the lung is most prevalent, somewhere between three fourths and a half will be included, depending on the age group. In a community of 100,000 persons the best data on the incidence of pulmonary cancer leads one to expect an annual incidence of 7 or 8 cases. If interest were confined to screening for cancer of the lung the survey would probably be limited to persons over 35 or 40 years of age, since this segment of the population will have most of the pulmonary cancer. This would reduce the number to be screened to about 35,000 instead of 100,000 persons. It has been found in tuberculosis surveys that the cost for mass roentgenologic screening of chests is about 65 cents per person, including large roentgenograms in cases in which pulmonary cancer is suspected. The cost of the roentgenologic portion of such a survey for cancer of the lung would be in the neighborhood of $23,000. To this would need to be added the cost of ancillary diagnostic procedures such as bronchoscopy and cytologic examinations in order to make a definitive diagnosis in certain cases. The purpose of this type of survey would be to recognize cancer prior to symptoms that normally would lead a patient into medical channels and eventual diagnosis. Unfortunately, information is lacking as to the time interval in the average case between earliest roentgenologic recognition and symptoms. This time interval would determine the frequency with which the screening should be repeated, and it would also determine the yield each survey would produce in new cases found. If this interval is twelve months, and a safer guess would probably be less than this, an annual survey would be required. Can the hypothetic community of 100,000 persons be induced to spend at least 25 cents per capita annually for the early recognition of its victims of cancer of the lung?

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[8] Problems which confront the surgeon on exploration and technical matters pertaining to segmental resection have recently been presented by Overholt, R. H., and Langer, L.: The Technique of Pulmonary Resection, Springfield, Ill., Charles C Thomas, Publisher, 1949.

Dr. Otto C. Brantigan, Baltimore: All physicians are interested in early diagnosis and treatment of cancer of the lung. Little improvement can be expected in the surgical treatment, but great strides are possible in early diagnosis, which bring about earlier treatment and correspondingly better results in the surgical treatment of carcinoma of the lung. When confronted with a patient with early carcinoma of the lung the physician might use "the silent phase" to excuse himself for missing the diagnosis. How silent the phase might be or how long the silent phase may extend often will depend on the persistence and skill of the physician in uncovering clues of its presence. If carcinoma of the lung reveals its presence by a small shadow on roentgenograms, can it be called silent? If careful cytologic studies reveal malignant cells in the sputum, can it be called silent even though no other symptoms or observations are present? Dr. Overholt has shown the importance of segmental atelectasis as a sign of early carcinoma. Dr. Rigler, and particularly Dr. Robbins, pointed out the importance of localized or segmental emphysema as a sign of early carcinoma. I would like to call attention to the importance of increased density of the hilar shadow as a presumptive diagnosis of centrally placed carcinoma of the lung. Dr. Overholt has described 2 patients who had roentgenographic evidence of carcinoma of the lung two and seven years before being subjected to surgical treatment. In both patients the growth was resectable. Such a condition is unusual and results in too much optimism. The more usual course of the disease is one of great rapidity. Dr. Overholt noted 10 tumors in which the "diagnosis was undetermined histologically." I have had that experience. I would like to ask the following question: with the chest open and a specimen taken for biopsy, microscopic examination of the frozen section leaves the diagnosis undetermined histologically; what does Dr. Overholt do for that particular lesion?

Dr. Leo G. Rigler, Minneapolis: My co-workers and I have made some observations that might answer the question Dr. Dunn raised, and that is why I take the opportunity to present them at this time. In studying a large series of cases of carcinoma of the lung which have appeared at our hospital, we tried to get the past roentgenologic history of the patient. Many persons have had a roentgenogram of their chest made at some time or other, whether in a mass survey or on entrance into a hospital; as a result, through fortuitous circumstances we have been able to collect such roentgenograms made in other hospitals and institutions through the state at varoius times prior to the time when the patient appeared with symptoms. We now have a collection of cases in which we have roentgenograms made seven years, three and a half years, two and a half years and one and a half years previously, in which there are evidences which should have directed attention to the lung—not clearcut evidences of carcinoma but evidences of disease which should have invited further investigation that would undoubtedly have disclosed the carcinoma of the lung. These evidences to which I refer are often overlooked in the interpretation of roentgenograms. One of them, referred to by the last speaker is pulmonary ephysema, either segmental, which is easily overlooked unless close attention is paid to it, or general increased radiability of one lung, which in our experience has proved to be an early sign of carcinoma of the bronchus. The second is a minor difference in the size of the root shadow of the two lungs, a thing which is often passed up casually but may be a relatively early indication of cancer. The third is bandlike or linear areas of atelectasis in the lungs. The fourth is a nodule in the periphery, which is easily seen but which, again, is too often passed up as being a tuberculoma or something of no great significance. I wish to emphasize that it is possible to demonstrate a lesion in the lung roentgenographically long before the patient has any symptoms or anything that would lead him to come to the physician for treatment of a pulmonary condition.

Dr. Richard H. Overholt, Brookline, Mass.: It was my hope that attention would be focused on the great value of tuberculosis screening as a simultaneous and automatic method for detection of cancer of the lung. Such a double campaign would also emphasize to all physicians the necessity for immediate roentgen examination and proper labeling of all patients with symptoms relating to the chest. A screening program may boomerang and physicians may bring forth criticism if the follow-up of cases with abnormal shadows is fumbled. If a patient is told that an abnormal shadow is present and if it is not labeled properly and adequate treatment instituted, it will be difficult to justify the error if he later dies of cancer of the lung. Dr. Brantigan has asked, "Is this really a silent lesion if it can be seen by roentgen ray?" Certainly it is proper to use the word "silent" for lesions that have not as yet produced symptoms. Atwell has divided cancer growth into four phases: 1. Latent: Malignant cells present, capable of growth, yet not discoverable by present means. 2. Silent: Asymptomatic, yet detectable by clinical means. 3. Urgent: The early symptomatic stage and detectable, yet little time left in which to treat successfully. 4. Rampant: Symptomatic, with obvious clinical signs and easy to diagnose—usually out of bounds so that cure is impossible. Unfortunately, in the past, the clinical picture of cancer of the lung has been that of the rampant stage, with weakness, weight loss, dyspnea, chest pain and hemoptysis. The question was raised as to the procedure of exploration in unverified cases. In many cases, it is possible to secure a biopsy specimen of the tumor or regional gland. A bronchotomy may be necessary. For an inaccessible lesion, unverified, the smallest unit bearing the lesion is removed (i. e., subsegment, segment or lobe). This is immediately examined and a frozen section made. Then, if the process is malignant, the mediastinal lymph nodes and the remainder of the lung are removed. If the lesion is benign, the surgical operation is concluded without sacrifice of healthy lung tissue and the wound is closed. In many instances, however, the exact diagnosis can be determined preoperatively. The Papanicolaou method of examination of the sputum or bronchial washings has raised the percentage of correct diagnoses considerably. I should like to emphasize again that cancer originating in the lung should be the most favorable for treatment of all internal cancers. We now have in operation a screening process which should enable us to identify many cases of cancer of the lung while the lesion is still in a curable phase and long before the patients would otherwise know they were harboring a potentially fatal disease.

CONSERVATIVE SURGICAL MANAGEMENT FOR CERTAIN RECTAL ADENOMAS SHOWING MALIGNANT CHANGE

SAMUEL McLANAHAN, M.D.
GLENN P. GROVE, M.D.
and
RICHARD F. KIEFFER Jr., M.D.
Baltimore

Polypoid lesions of the lower portion of the colon represent one of the most active frontiers in the advancing fight which clinical surgeons are waging against malignant disease. They are of especial interest and significance for three reasons: first, the relative frequency with which they occur; second, the close relationship they bear to carcinoma of the same region, and third, the relative ease with which, in the majority of cases, the diagnosis can be made and treatment rendered.

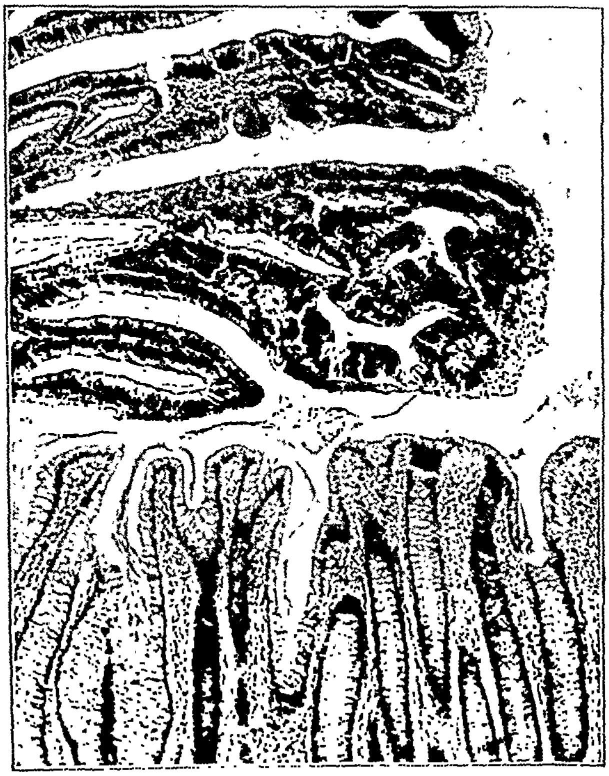

Fig. 1.—Photomicrograph of malignant rectal polyp, showing contrast between normal glandular pattern along lower margin and adenocarcinoma on upper (darker) portion.

The attention and thought of many of the ablest proctologists and pathologists have been directed toward numerous controversial features of this problem, with the result that there is an accumulated reservoir of information and experience which is leading to increasing agreement on principles of diagnosis and treatment. Yet there is a distinct paucity in follow-up studies on groups of patients who have had their polyps removed. This is especially true of the group with adenomatous polyps of the rectum showing malignant change, the type often referred to as "adenoma malignum." From many surgeons with whom we have discussed this problem, we learn that a given case in which malignant change has been observed in a polyp presents the necessity for an exceedingly difficult decision. A choice must be made between a relatively simple conservative surgical procedure and a radical operation for cancer. In order to learn from the background of clinical experience and in order to formulate certain criteria to guide in making such a decision, the clinical courses of a group of patients with adenomas showing malignant change have been followed and studied.

However, before presenting these observations it is advisable to emphasize certain previously recorded data and conclusions. Especially important is the disproportion between the actual incidence of colonic adenomas and the frequency with which the diagnosis is made. In a series of 7,000 consecutive autopsies at the Cook County Hospital, Lawrence[1] found an incidence of 2.3 per cent. More recently Helwig[2] has reported a rate of 9.5 per cent among 1,460 autopsies. Certainly the clinical rate of discovery is less than this and is even reduced when one considers the observation that in nearly half the cases the adenomas were multiple. Though it is difficult to trace the exact relationship between the so-called benign adenoma and frank adenocarcinoma of the colon, it is admittedly a close one. Swinton and Warren[3] reported that at least 14 per cent of 827 cases of carcinoma of the colon were true malignant adenomas, and Helwig[2] expressed his belief that the majority of carcinomas of the colon arise in preexisting adenomas. From the point of view of the fate of such adenomas, there is considerable disagreement. Some writers (Womack[4] and Fitzgibbon and Rankin[5]) have been of the opinion that a certain number of these lesions are destined for a benign course and that their benignancy can be assessed on the basis of certain gross and microscopic characteristics. Others are inclined to agree with Martin,[6] who writes: "The greatest majority, if not all, polypoid lesions of the colon and rectum, whether sessile or pedunculated, single or multiple, however small, will show definite changes from the normal whether they be anaplastic, hyperplastic or in the so-called precancerous state, and if allowed to remain in situ will become frankly malignant." More recently Helwig,[2] after a careful study, concluded that there are no histologic characteristics which will permit one to predict a benign course for any particular group of adenomas. Moreover, the frequency with which adenomas are found in colons resected for carcinoma, the similarity of locations in which these two lesions are most frequently encountered in the colon and the fact that the average age of the adenoma patient is just ten years less than that of the carcinoma patient constitute indirect evidence of a close relationship.

PATHOLOGY

While many authors have stressed the value of palpation and visualization of a rectal adenoma in determining the presence or absence of a malignant state, we believe that the microscopic appearance of a polypoid

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From the Surgical Services of the Union Memorial Hospital and the Johns Hopkins Hospital.

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

[1] Lawrence, J. C.: Gastrointestinal Polyps: Statistical Study of Malignancy Incidence, Am. J. Surg. **31**: 499-505 (March) 1936.

[2] Helwig, E. B.: The Evolution of Adenomas of the Large Intestine and Their Relation to Carcinoma, Surg., Gynec. & Obst. **84**: 36-49 (Jan.) 1947.

[3] Swinton, N. W., and Warren, S.: Polyps of the Colon and Rectum and Their Relation to Malignancy, J. A. M. A. **113**: 1927-1932 (Nov 22) 1939.

[4] Womack, N.: Adenomas of the Rectum, S. Clin. North America **24**: 1143-1150, 1944.

[5] Fitzgibbon, G., and Rankin, F. W.. Polyps of the Large Intestine, Surg., Gynec. & Obst. **52**: 1136-1150 (June) 1931.

[6] Martin, W. J., Jr.: Polypoid Lesions of Colon and Rectum, Tr. Am. Proct. Soc. **40**: 176-183, 1939.

growth is the only satisfactory means of differentiation. Furthermore, we would like to emphasize the advantage of obtaining a section of the intact polyp for histologic examination, as opposed to one or many biopsy fragments.

In the cases herein reported, the microscopic sections have all been carefully reviewed and have been found to conform with certain criteria for malignant change. The criteria follow essentially those previously laid down by Swinton and Warren and quoted by Swinton [7] in his report of 22 polyps showing early malignant change. These criteria may be listed under three headings: first, a prominence of juvenile epithelial cells with considerable variation in size and shape, with deep staining nuclei and frequent mitotic figures. Furthermore, there is a loss of polarity of the nuclei, so that they no longer aline themselves but are situated in any position from the surface of the lumen to the basement line. Second, there is a distortion of the generally regular glandular pattern of the growth. Not only is there a lack of intramural uniformity of the cells, but one finds no constant relationship with the various surrounding cells. Clumping and scattering of the epithelium is evident. Figure 1 illustrates adjacent normal and malignant areas in the same polyp. Third, invasion may have occurred; perhaps the cells displaying the individual abnormalities considered previously are growing into the pedicle or base of the growth and may actually be present in one or more layers of the bowel wall. To be classified as a malignant polyp, the growth must present at least the first and second of these groups of characteristics. All the polyps in our cases have satisfied at least these two requirements.

CLINICAL DATA

In order to determine the efficacy of local treatment of adenomas showing malignant change (adenoma malignum), the records of the Johns Hopkins Hospital and the Union Memorial Hospital were searched for cases in which (1) patients had been treated by local surgical measures, either excision or fulguration, (2) sections had revealed definite malignant change and (3) the patients could be followed for more than one year. Thirty-eight satisfactory cases were found. Although the lesion probably is not as rare as this relatively small number would suggest, many records were discarded because the common practice of securing only a small biopsy specimen prior to destroying the lesion by fulguration rendered the cases inadequate from the pathologic standpoint. Furthermore, the study was limited to those adenomas occurring in the lower sigmoid and rectum because they have formed a special problem in diagnosis and treatment. No lesion treated primarily by laparotomy has been included.[8]

It has been possible to follow all 38 cases for at least one year, and over 70 per cent of them have been followed for more than four years. Although the generally accepted sex ratio is 3:2 with the predominance being found in the males, in this small series the ratio is exactly even. At the time of their original treatment, the patients varied in age from 26 to 76 years.

By reference to table 1, it can be seen that 28 patients, or nearly three fourths of the entire group, whose malignant polyps were removed remained cured during the period of observation. This is of great significance when one considers the pathologic criteria and the mode of removal. Most of these polyps were excised or removed by a combination of excision and fulguration of the base.

In 5 patients there developed simple recurrences, which were benign or of no higher degree of malignancy than the original lesion. Three of these 5 had more than a single recurrence. In another group of 5 patients there developed recurrences that were identified as frank adenocarcinoma; these developed either as single recurrent tumors or as multiple recurrences that eventually became malignant . Thus it is to be noted that 10 patients, or approximately one fourth of the group, had demonstrable local recurrences and that 5 of these 10, or approximately one eighth, had lesions clinically diagnosed as cancer. It is interesting that 8 of the 10 recurrences appeared within one year of the original operation and all had appeared within two years, emphasizing the need for repeated observation of the site of the polyp during the first two years.

Table 1.—*Tabulation of Follow-up in Terms of Simple Recurrences and Development of Frank Adenocarcinoma*

Follow-Up, Yr.	Number of Cases	Simple Recurrences	Frank Adenocarcinoma
1 to 3	10	0	2
4 to 6	16	3	2
7 to 9	7	0	1
Over 10	5	2	0
Totals	38	5	5

Table 2.—*Recurrence in Relation to Invasive Character of Original Tumor*

Original Tumor	Number of Cases	Simple Recurrences	Frank Adenocarcinoma
Invasive	15	1	5
Noninvasive	23	4	0
Totals	38	5	5

Recurrence was also studied in the light of invasive characteristics as determined in the pathologic study of the original adenoma (table 2). The term "invasive tumor" indicates one in which the malignant development has been more than an in situ change and in which there has been progression of the malignant cells to the stalk or base of the tumor, or even into the bowel wall. This corresponds to the third heading of our criteria. We believe that in many cases this must be purely a microscopic diagnosis and that invasion, short of local metastasis, cannot be determined by palpation or gross appearance. Consequently, if the tumor has been destroyed in the process of its removal, or if only a small biopsy specimen has been secured, this characteristic may not be recognized. Reference to table 2 shows that 15 of these malignant adenomas were invasive and that the remaining 23 were not. The incidence of simple recurrence in the two groups is also indicated in this table, as is the incidence of frank adenocarcinoma. Especially striking and significant is the fact that the 5 adenocarcinomas occurred within the group of 15 originally invasive adenomas. Hence we see that one third of the tumors that originally showed invasion developed into cancer. The serious portent of the disease in this small group of 5 patients is further emphasized when it is learned that 3 of the patients died of their cancer, one is doomed by extensive metastases and the fifth appears to owe his life to an all but miraculous cure.

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[7] Swinton, N. W.: Diagnosis and Treatment of Mucosal Polyps of the Rectum and Colon, with Early Malignant Change, Am. J. Surg. 75: 369-379 (Feb.) 1948.

[8] Many patients whose records and follow-up are included in this report are from the clinical material of Dr. Harvey B. Stone.

This last patient has a particularly interesting history. In March 1939 a polypoid lesion 1 cm. in diameter was found on the anterior rectal wall 12 cm. above the sphincter. This was excised with a cuff of mucosa, and on pathologic examination proved to be an adenoma malignum (fig. 2) with early invasion. A radical operation was advised but refused by the patient. The operative site healed promptly, but four months later a definite recurrence had developed and an anterior resection of the rectosigmoid was performed with a colostomy and inversion of the rectal stump. The patient progressed well, and after another four months the colostomy was taken down and the sigmoid end was anastomosed to the rectal stump. The patient remained well except for a stricture at the anastomosis which responded to dilatation. However, early in 1943 he became chronically ill, with a dry cough, malaise, weight loss and intermittent fever. A roentgenogram of the chest revealed a well circumscribed mass in the right lower lung field. Since this was a solitary mass and there were no other evidences of recurrence of his rectal carcinoma, it was believed that thoracotomy was indicated. On Sept. 22, 1943 a right pneumonectomy was performed by Dr. Alfred Blalock. Pathologic examination of the right lung demonstrated a tumor 5 cm. in diameter in the lower lobe. On microscopic section (fig. 3) the lesion proved to be metastatic adenocarcinoma without involvement of the hilar lymph nodes. This patient remains in good health without signs of recurrence, ten years after the removal of his polyp and five and a half years after the pneumonectomy for a pulmonary metastasis.

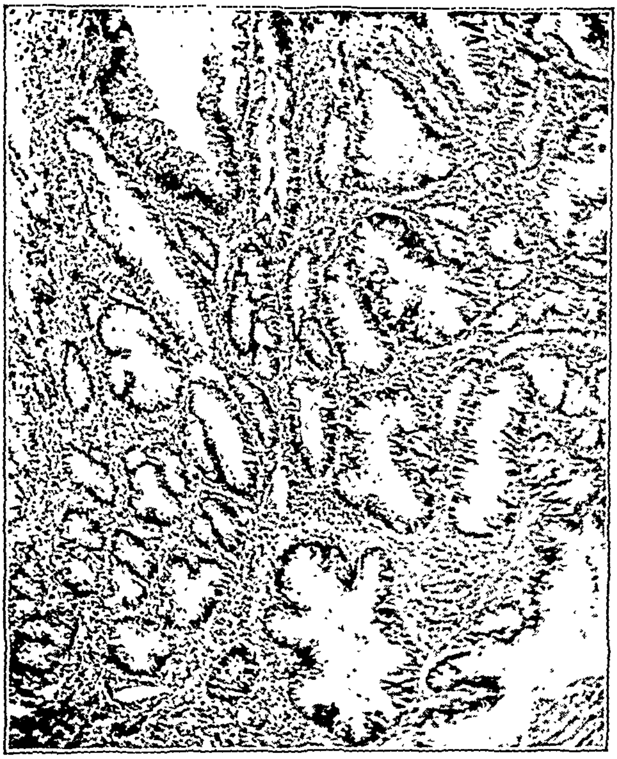

Fig. 2.—Photomicrograph from original rectal adenoma of case reported in text. Note deep staining of many of the epithelial elements as well as irregularity in contour and thickness of glandular walls.

In several patients multiple recurrences developed, and it is our impression that this constitutes a poor prognosis, even though pathologic examination of the recurrence may not demonstrate adenocarcinoma. One such patient was found to have a large polypoid lesion on the lateral rectal wall 6 inches (15 cm.) above the sphincter. This was excised, and the operative site healed uneventfully. In the course of the next five years four recurrences developed at the same location, and it was only the last of these that proved to be frank adenocarcinoma. Shortly thereafter he was subjected to radical operative intervention elsewhere. He died in the postoperative period of causes unknown to us. In such a case repeated failure to destroy the growth may constitute an indication for radical surgical measures in the same manner that radical surgical treatment of a prophylactic nature is advised in multiple polyposis.

In a discussion of recurrence of these adenomas, mention should be made of the frequency with which multiple growths are found. Several of the patients reported here had more than one polyp when first examined, and follow-up examinations on several others revealed the presence of new polyps which were not recurrences and which were not present at the initial examination. Reports of autopsy series indicate that approximately one half of such patients have more than one polyp. Consequently, the patient with a colonic adenoma should be considered as having a predisposition for the formation of these growths and should be advised to have periodic, thorough examinations for the detection of new lesions. Approximately 60 per cent of colonic adenomas can be seen through a 25 cm. sigmoidoscope. For those lying above this level, diagnosis by means of the air contrast barium enema is indispensable, though not entirely reliable.

COMMENT

The fact that 28 of these patients exhibited no further signs or symptoms of disease after the removal of their malignant adenomas adds further weight to the growing evidence that there is a group of these lesions which does not require radical operative removal. Cattell,[9] after having found no residual malignant tissue in the resected specimens, reached the same conclusion in some cases in which radical surgical treatment had been performed after local excisions of malignant adenomas. However, he went on to stress, as we do, the great importance of repeated sigmoidoscopic examination and, if indicated, biopsy . Should malignant growth subsequently appear in the bowel wall, radical operative measures must be undertaken. It would further appear that the experience with the patients of this series gives a clue toward the selection of those with malignant adenomas which require radical resection. The small group of patients in whom carcinoma developed all belonged to the larger group with malignant adenomas that showed invasive tendencies. When such evidence of invasion is present, radical operative intervention in general is indicated. This advice must be qualified by the necessity of individualizing these patients, especially with regard to advancing age and general physical condition. With these exceptions out of the way, the likelihood in this small group of the development of clinical cancer is far greater than the mortality associated with abdominoperineal resection. One must not lose sight of the urgency of radical resection for any established malignant growth in the bowel wall. It is the only sound treatment.

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[9] Cattell, R. B.: Surgical Treatment of Polyps of the Large Intestine, Am. J. Surg. 76: 733-747 (Dec.) 1948.

The most commonly reported method of treating adenomas of the lower part of the bowel is destruction by fulguration through a sigmoidoscope with or without preliminary biopsy. Buie, Smith, Jackman and Hill[10] have recently presented a valuable study of their unparalleled experience in dealing with the polypoid lesions of the lower portion of the bowel and have emphasized the indispensable part of fulguration in their management. It is to be pointed out that there are dangers inherent in this method in the hands of any but experienced proctologists. It will be generally conceded that one of the drawbacks to fulguration is that the technic frequently destroys much or all of the specimen. It is on the careful histologic examination of the entire tumor, particularly in the region of the base, that we believe the treatment and prognosis should be determined. Most of the tumors in this report were excised with a cuff of surrounding mucosa by delivering the tumor into or through the anal canal after dilatation of the sphincter. As Dr. Harvey B. Stone has frequently pointed out, it is often surprising from what a distance a polyp can be brought into an accessible range. In general a polyp which can be felt with the finger can be made accessible for excision. There are, of course, exceptions. David[11] has recommended division of the sphincter in the posterior midline in order to increase exposure. For the higher lesions, we believe that transperitoneal colotomy should be employed more frequently and can be done with greater safety than ever before. The surgical experiences in this group of patients, the pathologic observations and the follow-up studies all point to the value of a wider utilization, where possible, of the principle of surgical excision of the adenomas of the lower portion of the bowel. By this method the polyp is out, the pathologist has an adequate specimen, and the prognosis not only can be formulated but usually can be controlled.

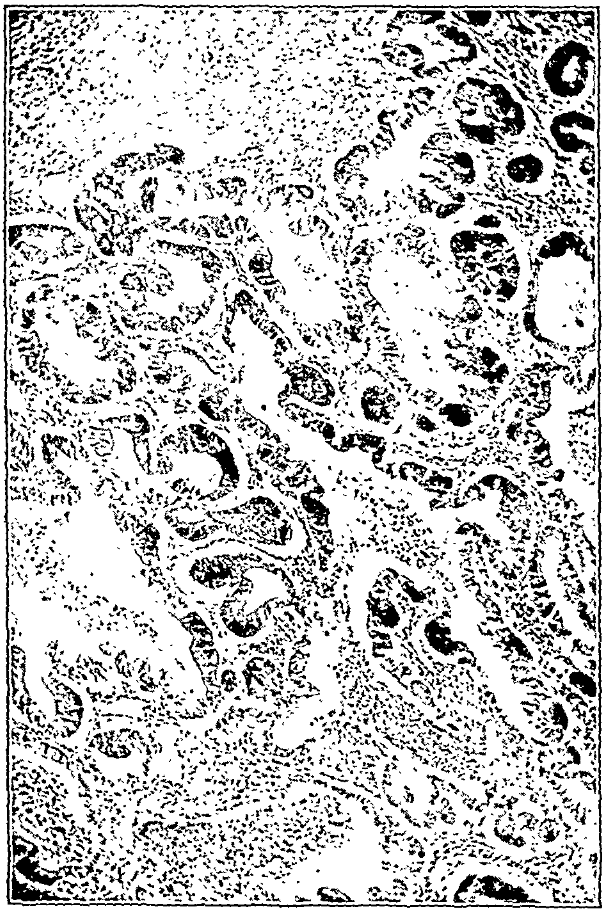

Fig. 3.—Photomicrograph of metastatic tumor of left lung (same case as fig. 2). The identical pattern of the rectal malignant polyp is repeated microscopically in the metastatic area in the lung field.

SUMMARY AND CONCLUSION

Polypoid lesions of the lower portion of the bowel are of special interest because of their close relationship to adenocarcinoma of the same region. The adenoma showing malignant change (adenoma malignum) presents a problem in management. There has been a paucity in reports of such cases with good pathologic and adequate follow-up studies. In determining the pathologic status of these lesions, stress is laid on differentiation by microscopic appearance and the value of sections of the intact polyp. Pathologic criteria have included changes in the cells, the alteration in the glandular structure and occasionally the tendency to invade. The clinical studies cover 38 cases, all treated by local surgical methods, all having sections showing malignant change in the adenomas and all having been followed for more than a year. Twenty-eight, or nearly three fourths of the group, have remained well following local removal of their polyps. Ten, or approximately one fourth, have had one or more local recurrences, which in 5, or approximately one eighth, were clinical cancer. Most recurrences came within a year. Fifteen of these tumors originally showed microscopic evidence of invasion. The tumors of the 5 patients in whom clinical cancer developed were in this group, emphasizing the prognostic significance of this observation. The frequent occurrence of multiple growths presupposes complete and repeated examinations. Finally, the evidence indicates that most of these patients can be cured by complete local eradication of the polyp; that a tendency of the tumor to invade the bowel microscopically is a poor prognostic sign and may be an indication for radical operative removal, and that prolonged careful follow-up is required. The radical resection of growths of established malignancy is mandatory. Although fulguration is an indispensable form of treatment for many such lesions, it has inherent dangers and fails to allow for securing a specimen of the entire tumor. A wider utilization, where possible, of the principle of surgical excision of these polyps is stressed, for thereby the polyp is well treated, the pathologist has an adequate specimen and the prognosis can be better formulated and even controlled.

ABSTRACT OF DISCUSSION

Dr. Harvey B. Stone, Baltimore: I congratulate Drs. McLanahan, Grove and Kieffer for presenting a timely and valuable paper which is a contribution to a problem of vital importance, one that is by no means generally clarified. Basically stated, should the presentation of a rectal polyp be regarded as the earliest and most favorable opportunity to carry out a radical surgical attack for carcinoma, or would that attitude entail unnecessarily destructive surgery for certain lesions which were essentially innocent? That is the issue. I would emphasize the principles enunciated by Dr. McLanahan: where feasible, local excision of the lesion, with an ample surrounding margin as its base, is ideal primary treatment, rather than immediate radical operation, or the destruction of the polyp itself by fulguration. The first alternative of an extensive operation of destructive character is obviously not necessary in a great many of these cases; and the other alternative of destruction by fulguration of the lesion itself deprives one of an opportunity to determine its exact nature and the precise implications of the prognosis of such a lesion. The real question, and I am still in some doubt about it, is, what should be the surgeon's attitude in those cases where the polyp has been removed and where the microscope shows an invasive process involving its pedicle and perhaps its base? On the basis of that information, should one proceed without further waiting to perform a radical resection, or should one wait and watch the further course before reaching a definite decision? My feeling, particularly in view of the fact that 15 of these cases are reported, in only 5 of which there was local recurrence, is that it would be wiser not to assume from the histologic appearance alone that it is necessary to do a radical procedure at once but, rather, to wait and observe the further course of the disease. But that theory carries with it the emphatic obligation to make sure that frequent follow-up studies are carried out without fail; otherwise there will be local recurrence in a perceptible number of patients. That leaves for consideration the cases in which there is local recurrence. Should one go ahead and perform a radical operation? My opinion would be that removal of the recurrence and further observation would carry with it a heavy responsibility which the experience here recorded would hardly justify. Further experience may help. I believe that if there is a local recurrence of an invasive type of polyp, it would be hard to condemn the conclusion that this is sufficient justification for a radical operation.

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[10] Buie, L. A.; Smith, N. D.; Jackman, R. J., and Hill, J. R.: Polypoid Lesions of the Terminal Portion of the Colon, J. A. M. A. **139**: 702-709 (March 12) 1949.

[11] David, V. C.: The Management of Polyps Occurring in the Rectum and Colon, Surgery **14**: 387-394 (Sept.) 1943.

Dr. Martin S. Kleckner, Allentown, Pa.: The authors have endeavored to outline an avenue of approach via the anal canal whereby selected malignant adenomatous polyps within the range of the sigmoidoscope may ofttimes be effectively eradicated, either by surgical or electrical means. Proper examination with the gloved finger and the use of low and high lighted scopes (the latter being the sigmoidoscope), coupled with the information secured from the biopsy, will give the proctologist information as to the size, position, degree of mobility and also pathologic classification of the polyp. He will observe whether the growth is sessile or pedunculated. These facts will enable him to select the method, via rectum or abdominal wall, which he believes to be most adaptable for the removal of the growth and also to give the patient the best possible chance for cure. If during the sigmoidoscopic examination a polypoid growth is discovered, it is urgent that radiologic study of the rest of the large bowel be undertaken by double contrast barium air enema, prior to any operative procedure in the office or the hospital. Using the fulgurating snare and scope, I have taken out fully thirty-five rectal and sigmoidal polyps, ranging in size from a cherry stone to the cherry itself, which showed early to definite malignant change. Of this number, perforation resulted in two and abdominal entry was necessary. In this same group of cases which were checked at intervals of one to three months, it was necessary eventually to perform radical resection in 25 per cent. Villous papillomatous growths (ten in series), ofttimes the size of a lemon and bleeding profusely, were most frequently located in the distal 5 inches (13 cm.) of the terminal portion of the bowel. They possessed a stout pedicle and were resected per rectum, the base then being cauterized. Although 30 per cent of the lesions showed definite malignancy, only one demanded the Miles operative procedure after four years. The great danger in surgical excision by rectal approach is the possibility of injury and serious subsequent infection above the line of peritoneal reflection, particularly when the growth is on the anterior surface of the bowel. Likewise, this conservative type of treatment may act as a boomerang later on, when there are recurrences, and it appears that a primary radical surgical procedure would have been the better course. Good anatomic knowledge, thorough study of the malignant polypoid growth and the exercising of profound skill and judgment are required on the part of the surgeon to determine whether sigmoidotomy, by laparotomy, or proctotomy, by rectal approach, is better.

PYOGENIC ARTHRITIS WITH PATHOLOGIC DISLOCATION OF THE HIP IN INFANTS

JESSE T. NICHOLSON, M.D.
Philadelphia

This report presents a study of 10 subjects treated at the Philadelphia Children's Hospital who had pyogenic arthritis with pathologic dislocations of one or both hips before 18 months of age. Four subjects have been followed seventeen years (1 twenty-eight years). Their femoral and pelvic growth appears to be complete. Two additional subjects have been followed eleven years. One subject, who had been followed four years prior to the war, has not subsequently been discovered. Three subjects have been admitted to the hospital in the past three years.

Contributing Infection in Ten Cases of Pathologic Dislocation of the Hip

				Hip Culture	
Patient	Initial Infection	Organism	Septicemia	Left	Right
O. C. N.	Skin eruption	....	....	Staph	....
M. G.	Lobar pneumonia				
	Otitis media	Pneumococcus	....	Pneumococci	....
B. I.	Ethmoiditis	....	Hem. strep.	Hem. strep.	....
J. D.	Sinusitis	....	....	Not determined	....
T. M.	Sinusitis				
	Otitis media	....	Hem. strep.	Hem. strep.	Hem. strep.
F. B.	Pneumonia	....	Hem. strep.	Hem. strep.	....
	Otitis media	....	Staph. albus	Staph. albus	....
A. L.	Parotitis	Hem. strep.	Staph. albus	Hem. strep.	Hem. strep.
P. F.	Otitis media	Staph. albus	....	....	Not determined
W. D.	Fetal erythroblastosis	....	Staph. albus	Staph. albus	....
A. F.	Pneumonia	Pneumococcus			
	Otitis media	Staph. albus	....	....	Not determined

The study was prompted by two observations: first, the delay in diagnosing the infection of the hip and the resulting dislocation in infants; second, the resulting changes in the hip joint which were at variance with those observed in children with sepsis of the hips. These changes which took place during growth and development were manifest in four ways.

ETIOLOGY

In every instance the hip joint was involved secondarily (see the accompanying table). The primary infection in 5 infants was bilateral otitis media (3 of these cases were complicated by pneumonia, 1 by sinusitis); in 2 infants, sinusitis (1 case of ethmoiditis with streptococcic septicemia); in 1 infant, fetal erythroblastosis with staphylococcic septicemia; in another, parotitis with staphylococcic septicemia, and in still another, a skin eruption.

Septicemia was proved in 5 cases by blood culture. Two cultures yielded staphylococci, 2 streptococci and 1 staphylococci and streptococci.

Read before the Section on Orthopedic Surgery at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 10, 1949.

From the hip joint, the organism was cultured following aspiration or drainage of material in 7 instances. Three infections were due to hemolytic streptococci, 2 to hemolytic staphylococci, 1 to pneumococci, 1 to staphylococci and streptococci.

Other metastatic lesions were present in 6 infants. One had an abscess in the deltoid region. Five had other joints involved; in 2 of the 5 the opposite hip was affected.

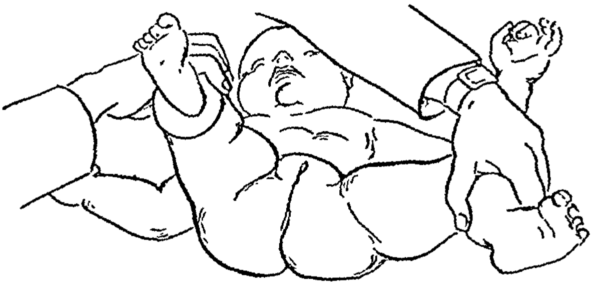

Fig. 1.—Abduction of the leg on the involved side is restricted when a dislocation has occurred.

DIAGNOSIS

The time elapsed before recognition of the infection of the hip joint in these infants after the onset of illness varied from five days to three months. The delay was due to several complications. The infant was severely ill. His illness was always attributed to an infection that demanded his admission to the medical or otolaryngologic service. In 1 infant there developed in turn pneumonia, cervical adenitis, otitis media and an abscess of the arm before the infection of the hip joint was recognized. Not infrequently, spontaneous rupture of the infected hip joint occurred and the resulting abscess in the thigh was drained without recognizing the infection in the hip joint as the source of the abscess.

Abscess formation in the thigh occurred along the adductor tendons, in Scarpa's triangle or posterior to the greater trochanter of the femur. There were three sources for these abscesses. As the joint capsule became stretched with exudate, the capsule ruptured at its inferior, medial portion. The abscess pointed between the adductor longus, anteriorly, and the adductor brevis and adductor magnus, posteriorly. The femoral and external iliac glands broke down with abscess formation. An abscess of the femoral gland, particularly the gland of Colquit or Rosenmüller, situated beneath Poupart's ligament, pointed in Scarpa's triangle. The abscess of the external iliac gland lay retroperitoneally above the thin sheath of the psoas muscle, so that it extended upward into the false pelvis or gravitated downward along the iliopsoas muscle.[1]

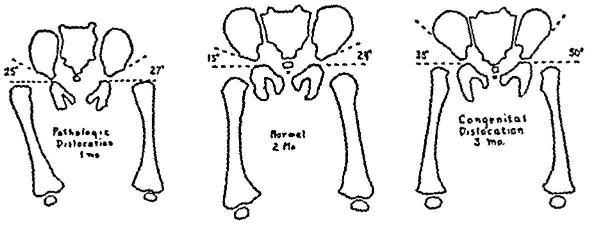

Fig. 2.—Tracing of roentgenograms to show the comparative angles of the superior rim of the acetabulum with the horizontal in *A*, infant with pyogenic arthritis with bilateral pathologic dislocation of hips, *B*, normal infant and *C*, infant with bilateral congenital dislocated hips.

The diagnosis of sepsis of the hip in an infant may be established by the following observations:

1. There is a primary illness, such as otitis media, pneumonia, sinusitis, abscess or furuncle.
2. The thigh of the side of the involved hip is held in flexion.
3. The irritability of the infant is increased by an attempt to change the position of the leg.
4. Enlargement of the thigh is observed.
5. Aspiration of the hip joint is rewarded by material that yields a positive smear or culture.

In 2 infants within the past three years the diagnosis of sepsis of the hip was not made until convalescence was completed. These infants had been treated with penicillin during the acute stage of their illness. One had otitis media. The other had been bedfast for three months with pneumonia, pertussis and bilateral otitis media. In both instances the unstable gait of the child after recovery from the illness prompted the parents to bring the child to the hospital.

Dislocation is a frequent sequela in septic arthritis of the hip. The position of flexion and adduction which is produced by protective muscle spasm is an unstable one for the hip joint. This position gives the greatest relaxation of the capsule. The infection producing an increase in joint fluid and exudate balloons out the hip joint capsule. Lenggenhager[2] has explained the dislocation as a result of the head being floated from the socket. He demonstrated this by the use of a metal ball in a saucer with a cuplike center. By introducing oil in the saucer, the displacement of the ball from the center cup was facilitated.

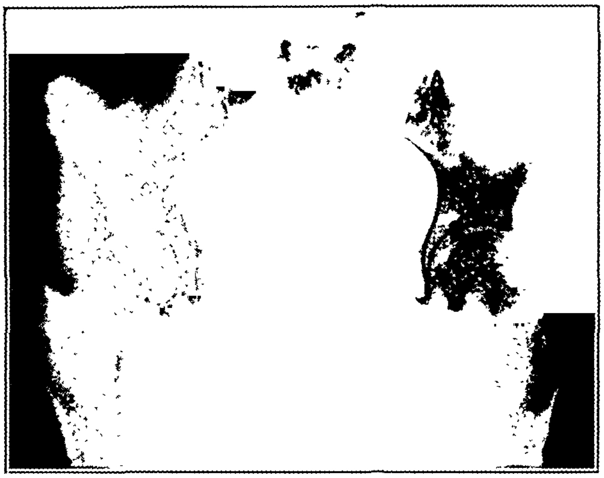

Fig. 3.—Roentgenogram of J. D., aged 18, March 5, 1949. Seventeen years after a pyogenic dislocation of the left hip at 12 months of age, there is full range of hip motion but with minimum changes in the head and neck of the left femur.

Among the 10 infants, the dislocation existed and was recognized in 3 when the septic arthritis was diagnosed. The dislocation was not recognized until one month later in 3 others and not until three to fourteen months had transpired in the remaining 4.

The diagnosis of pathologic dislocation of the hip in an infant is determined as follows:

1. The leg on the involved side is restricted in abduction (fig. 1).

2. The transverse crease in the thigh may appear to be deeper, or an extra crease may be apparent.

3. A roentgenogram will show an elevated position of the upper femoral metaphysis, a position of the

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[1] Freiberg, J. A., and Perlman, R.: Pelvic Abscesses Associated with Acute Purulent Infection of Hip, J. Bone & Joint Surg. **18**: 417 (April) 1936.

[2] Lenggenhager, K.: Spontaneous Luxation of Hips, Schweiz med Wchnschr. **76**: 381 (May) 1946.

metaphysis more lateral to the acetabulum, and the acetabular rim will be developed sufficiently to meet the specification for a normal hip socket of an angle of 30 degrees or less with the horizontal as emphasized by Kleinberg and Lieberman[3] (fig. 2).

SEQUELAE

The sequelae of the pyogenic hip with pathologic dislocation have been described by Slowick[4] and Badgely and others[5] as at variance from those observed in a child. Motion of the hip joint was normal after reduction of the dislocation if the ossification center of the capital epiphysis was preserved. Recurrence of infection was not subsequently encountered. Among the 10 infants forming the basis for this report, four types of residual changes were observed as growth and development advanced:

1. *Minimal Roentgenologic Changes in the Femoral Head and Neck.*—There were 2 subjects with minimal roentgenologic changes. They had had unilateral involvement. They had had no changes in the femoral head following reduction of the dislocation of the hip. They had remained free from symptoms, and the involved hip retained motion symmetric to the uninvolved hip. By clinical measurement no difference in leg lengths was determined. One subject was observed for seventeen years after a pathologic dislocation at 1 year of age during acute sinusitis. The other subject was observed for eleven years after the hospital admission, at 6 months of age. This subject had had pneumonia two months previous to admission, followed by cellulitis of the neck and bilateral otitis media. He had a positive blood culture for staphylococci and streptococci. An abscess developed on his arm. Ten days after admission, it was discovered that the hip was dislocated. The culture of material obtained from the hip by aspiration and drainage showed both staphylococci and streptococci. This subject had an uneventful recovery after being held eleven weeks in a plaster of paris spica and five additional weeks in traction. In both subjects the femoral neck was found to be shortened and the height of the head diminished (fig. 3).

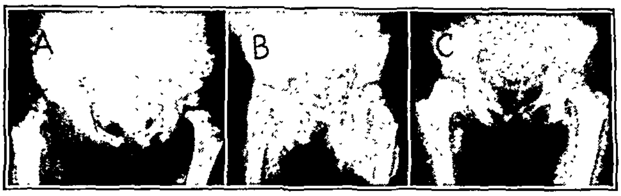

Fig. 4.—P. F., an infant aged 11 months whose dislocation became apparent on ambulation. *A*, notice the normal development of the right acetabulum and the increased density of the dislocated capital epiphysis; *B*, two months after reduction, disappearance of the capital epiphysis; *C*, three years later at age of 4 years (March 1, 1949) the capital epiphysis and femoral neck show a typical coxa plana deformity as from osteochondritis of the femoral head.

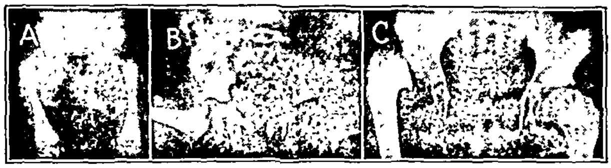

Fig. 5.—A. L., *A*, bilateral hemolytic streptococcic arthritis of hip with dislocations in an infant 1 month of age; *B*, reduction at 5 months of age (Oct. 20, 1938) following successive abduction plaster casts; *C*, roentgenogram at 10½ years of age (March 5, 1949) reveals a dislocation of the neck of the femur and loss of development of the acetabulum.

2. *Circulatory Necrosis of the Head of the Femur.*—Circulatory necrosis of the femoral head was demonstrated by an infant aged 11 months admitted to the hospital in February 1946. One month prior to admission she had had bilateral otitis media, following which she began to walk with a limp. The ears were draining on admission; culture revealed Staphylococcus aureus. Roentgen examination showed that the ossification center of the femoral head was equal in size to that of the opposite hip. The rim of the acetabulum was well formed, but the hip was dislocated from the socket (fig. 4 *A*). Well-leg traction was applied, and the head of the femur was drawn down opposite the acetabulum. It was then reduced and held in an abduction plaster for three months. At this time, it was noticed that the head had undergone absorption (fig. 4 *B*). Use of an abduction brace was continued. A year later, the capital epiphysis presented changes resembling those from osteochondritis. Three years later, a coxa plana deformity (osteochondritis of the capitular epiphyses) had developed (fig. 4 *C*).

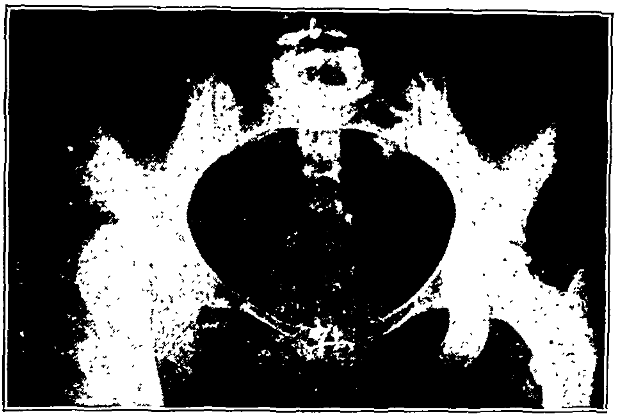

Fig. 6.—O. C. This dislocation of the left hip was not recognized until sixteen months after an abscess of the left thigh was drained. The ossification center of the femoral head absorbed. The roentgenogram of the subject at 29 years of age (Feb. 26, 1949) shows the adaptation of the femoral neck to the acetabulum.

3. *Faulty Development of the Acetabulum.*—Faulty development of the acetabulum occurred only if the head of the femur or nubbin of neck failed to be maintained in the acetabulum. Illustrative of this was the infant who was admitted at 1 month of age on June 6, 1938. His birth had been difficult after a five hour labor. He was rigid at birth and spit bright blood. One leaving the maternity hospital, it was noticed that he had a swelling of the right side of the face. One week later the infant resented having his legs moved. On admission to the hospital he had septicemia due to Staph. aureus, but hemolytic streptococci were found in material aspirated from both hips (fig. 5 *A*). Culture of drainage material from the parotid gland also yielded hemolytic streptococci. The dislocated hips were reduced by gradually increasing their abduction by means of cast changes at two week intervals (fig. 5 *B*). The head of the femur on the left side failed to develop. After five years the non-weight-bearing caliper brace was discarded, and one year later the left hip luxated. The roentgenogram five

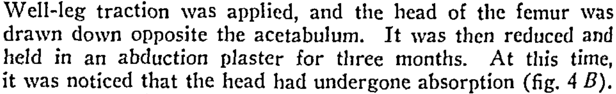

Fig. 7.—B. I. had pathologic dislocation of the hip at 11 months of age with reduction at 13 months. *A*, varus position of the neck of the femur and an unstable hip necessitated use of a non-weight-bearing caliper brace until the age of 5½ years (1936); *B*, roentgenogram in 1936 following subtrochanteric osteotomy to correct varus position of the neck; *C*, roentgenogram March 3, 1949 (patient aged 18) thirteen years after subtrochanteric osteotomy, showing the development of the hip joint as result of correction of coxa vara.

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[3] Kleinberg, S., and Lieberman, H. S.: The Acetabular Index in Infants in Relation to Congenital Dislocation of the Hip, Arch. Surg. **32**: 1049 (June) 1936.

[4] Slowick, F. A.: Purulent Infections of Hip: Analysis of Sixty Cases, New England J. Med. **212**: 672 (April 11) 1935.

[5] Badgely, C. E.; Yglesias, L.; Perham, W. S., and Snyder, C. H.: Study of the End Results in One Hundred and Thirteen Cases of Septic Hips, J. Bone & Joint Surg. **18**: 1047 (Oct.) 1936.

years later revealed a shallow acetabulum or loss of acetabular development and a dislocation of the femoral neck (fig. 5 *C*).

4. *Absorption of the Femoral Head.*—Absorption of the femoral head occurred in 7 instances among the twelve hips which had a pathologic dislocation. It was believed that the absorption was of the ossification center of the femoral head. Late recognition of the septic condition of the hip appeared to favor this result. One case bears this out well. The patient was admitted to the hospital at 11 months of age, on June 27, 1921. The illness was of three days' duration, following a skin eruption of the face and chest. An abscess in Scarpa's triangle on the left thigh was drained three weeks after admission. The dislocation of the left hip was not recognized until sixteen months after the onset of the illness. A non-weight-bearing brace was applied, which the subject wore for twelve years. The woman is now 29 years of age. The left hip motions are: flexion, 165 to 90 degrees; abduction, 10 degrees; adduction, 15 degrees; internal rotation, 5 degrees, and external rotation, zero. The result of the Trendelenberg test is positive. The leg is 1¼ inches (3.18 cm.) shorter than the opposite one. The roentgenogram reveals the short stump of the neck, which has accommodated itself to the acetabulum (fig. 6). There are 2 other patients in this group who have been followed eighteen and nineteen years. They both show a corresponding difference in leg lengths but a greater range of hip motion and a negative result in the Trendelenberg test. One has flexion from 170 to 70 degrees; abduction, zero; adduction, 30 degrees; internal rotation, 10 degrees, and external rotation, zero. The other, who had a subtrochanteric osteotomy to produce a valgus position of the neck at 5 years of age (fig. 7 *A*, *B* and *C*), has now a range of hip motion as follows: flexion, 170 to 40 degrees; abduction, 20 degrees; adduction, 10 degrees; internal rotation, 10 degrees, and external rotation, zero. This man works as an auto mechanic. He walks 7 miles (10 km.) at a stretch. He plays baseball, goes roller skating and rides a bicycle 38 miles (61 km.) in a day.

In the 3 subjects who had completed growth, after absorption of the ossification center of the femoral head there was no difference roentgenologically in the comparative measurements with the uninvolved side of the femoral length from medial condyle to the trochanter. There was 1¼ to 1½ inches (3.18 to 3.81 cm.) difference in length from the superior acetabular rim to the medial femoral condyle, which represented the loss of the femoral head. Although the pelvis was smaller on the involved side, the comparative acetabular diameters remained the same.

TREATMENT

The recommended treatment for pyogenic arthritis with pathologic dislocation of the hip was that of the general infection with the use of antibiotics, fluids and whole blood as indicated. Fluid from the infected hip was aspirated for diagnostic purposes. The dislocation was reduced as soon as possible. In acute conditions this was generally done with moderate traction and internal rotation and maintained by abduction. After the dislocation had persisted several weeks, a tenotomy of the adductor tendons was necessary to obtain the reduction. Infants aged 1 year who had had the dislocation for some months required a period of traction before the reduction was attempted. Hoke well-leg traction had been used satisfactorily in unilateral dislocation. In small infants with bilateral dislocation, abduction was instituted until a position of 90 degrees was obtained for each hip. The abducted position of the legs was accomplished by double spicas of plaster of paris. These were changed at two week intervals until a full 180 degree spread was obtained. The aspiration of fluid from the hip joint was repeated if the fluid recovered was turbid and if pain in the hip continued in spite of immobilization. Drainage of the hip was indicated if the subject's toxemia persisted after immobilization in plaster in the absence of septicemia or other foci of infection, and if the symptoms of the infection in the hip joint had been of two weeks' duration and the aspirated material from the joint was of such purulence as to denote suppuration. Posterior drainage of the joint after the method of Ober was preferable. It was used in but 1 instance. In 4 infants in whom involvement of the hip joint was not recognized and the joint abscesses ruptured spontaneously, the abscesses were drained in Scarpa's triangle, along the adductor tendons or over the trochanteric region in cases in which they pointed subcutaneously.

Open reduction of the dislocated hip was indicated in those cases in which there was failure to reduce the dislocation or the joint redislocated under conservative means of treatment. Two open reductions were performed in this group of cases, 1 thirteen months after onset of the illness, which occurred when the patient was aged 6 months. This patient had fetal erythroblastosis and a staphylococcic septicemia with involvement of his left hip, left knee, right knee, left elbow and right shoulder. The left hip and right knee required open drainage. The left hip was held in the acetabulum by means of abduction, but the dislocation recurred about six months after reduction. The dislocation could not again be reduced when the attempt was made five months later. An open reduction was performed when the patient was 10 months of age by means of a Smith-Petersen approach. A dense fibrous scar was interposed between the epiphysis of the neck of the femur and the acetabular cavity. There was no cartilage in the acetabular cavity, but the cartilaginous rim of the acetabulum remained intact. After removal of the fibrous scar tissue, the neck of the femur was placed in the acetabulum and the position of abduction was held by means of a double hip spica for a period of three months, then an abduction brace was used for three months. From observation of other cases, this child will require a non-weight-bearing caliper brace for a period of some years. The other hip that was reduced openly had remained dislocated since the acute infection seven months' previously. The cartilage of both the acetabulum and epiphysis of the neck was preserved, though separated by dense fibrous tissue.

The non-weight-bearing caliper brace was used from four to fourteen years in the 3 subjects who have been followed for more than eighteen years and who had total absorption of the heads of their femurs. These subjects were cared for in this way by William J. Merrill, who died in 1935. They are outstanding examples of the value of the non-weight-bearing caliper brace for obtaining and maintaining the reduction of the nubbin of the neck in the acetabulum. Figure 5 *C* shows the result of discontinuing use of the non-weight-bearing caliper brace before the femoral neck has adapted itself to the acetabulum.

Osteotomy to place the epiphysis of the neck of the femur in a more valgus position was found to lead to a more stable hip. It sped up the adaption of the neck to the acetabulum. It permitted use of the non-weight-bearing caliper brace to be discontinued after four years in the 1 subject for whom the operation was performed. An increased range of hip motion resulted and has been maintained for thirteen years. This patient was admitted to the hospital March 16, 1932, at 11 months of age. Two weeks previously he had had acute ethmoiditis which resulted in a hemolytic streptococcic septicemia. He had an involvement of his right knee and his left hip, from both of which fluid was drained. Subsequent to surgical operation he was treated in traction, and after that a non-weight-bearing caliper brace was used until he was 5 years of age. At this time, an osteotomy was performed at the level of the lesser trochanter (fig. 7 *A* and *B*). Of the 3 subjects who had total absorption of the capital epiphysis of the femur and who have been followed for more than eighteen years, this patient has the greatest range of motion and absolute freedom from pain (fig. 7 *C*). Harmon and Adams[6] have demonstrated a similar development over a four year period in the femoral neck following osteotomy for the same reason in a patient at the age of 10 years.

CONCLUSION

An infant with otitis media or sinusitis should be regarded as a potential subject for sepsis of the hip. After such infections pathologic dislocation of the hip developed early because of the pronounced effusion within the hip capsule. It was recognized by the limitation of abduction of the involved leg. After reduction, immobilization in abduction and extension by means of a double plaster of paris spica proved satisfactory. The hip was drained when the infection was not recognized until late or when there was thick material on aspiration. Ankylosis of the hip and recurrence of infection were not complications. Residual change was observed by roentgen examination of the femoral head and neck at the completion of growth, although there was normal hip function and freedom from symptoms. Circulatory necrosis of the head occurred after reduction, but revascularization took place. The ossification center for the femoral head was frequently destroyed. If the neck was held in the acetabulum a stable hip resulted, but a luxation did not favor development of the acetabulum. A non-weight-bearing caliper brace was used if there had been destruction of the ossification center of the head of the femur. An osteotomy to produce a valgus position of the neck of the femur obviated continued use of the brace and resulted in a more stable hip with a greater range of motion. On completion of growth, the loss of the ossification center of the head of the femur resulted in 1¼ to 1½ inch differences in leg length. The diameter of the acetabulum was equal to that of the normal side if reduction of the dislocation was maintained.

330 South Ninth Street (7).

ABSTRACT OF DISCUSSION

Dr. Henry B. Crawford, Rochester, N. Y.: That the infant's femoral head is mostly composed of cartilage, which is quickly dissolved by pus, probably explains the easy dislocation when adducted and the absence of osseous ankylosis in the younger patients even when the dislocation is reduced. The fact that the septic conditions of these hips were all diagnosed late because the patients were on the otolaryngologic or medical service emphasizes the necessity of stressing in instructions to medical students Dr. Nicholson's first conclusion, that any infant with otitis media, sinusitis or septicemia from other foci should be regarded as a candidate for joint infection, and these conditions should be looked for each day. The best test I know for detecting early evidence of hip joint disease is to place the patient face down with his knees together and flexed 90 degrees so that his feet are up toward the ceiling. When the thighs are simultaneously internally rotated by separating the feet, the pelvis will roll with the affected hip. It is well to remember that spasm from a spinal lesion or an appendical abscess may also cause flexural contracture of the hip, but in these conditions the hip rotates freely when it is flexed 90 degrees. It seems worth noting that in 7 of the 10 cases dislocation of the hip was not recognized until one to fourteen months after the original sepsis of the hip was diagnosed. I would like to ask whether any method of maintaining adduction had been used prior to the diagnosis of dislocation. Physicians should remember the importance of preventing adduction deformity in any hip with sepsis, and I wonder whether fixation in abduction might not prevent dislocation if applied early enough and maintained long enough. In the résumé of this paper printed in the program of the Scientific Assembly it is stated that drainage of the hip joint was of questionable value. This statement was based on observing the results of late drainage. I believe that early drainage in cases of pyogenic joint infection is still a valuable procedure to help prevent destruction of articular cartilage. I would like to hear some comment as to whether repeated aspiration of fluid from the joint and injection of penicillin would be a better procedure in these exceedingly sick infants when the diagnosis is made early. It has been found that in cases of joint infection in which drainage is employed, rimming the petrolatum-packed wound with sponges dipped in Unna's paste to form a wall between the margins of the wound and the spica helps to prevent irritation of the skin from drainage under a cast.

Dr. John A. Heberling, Pittsburgh: Dr. Nicholson has presented a complete and careful study of a condition which has always been most difficult to treat and in which the final results are too frequently unsatisfactory. Early recognition and immediate treatment is most important. There is not always a primary illness, such as otitis media or pneumonia, and the local signs in the hip joint itself are the only symptoms of disease. These are frequently missed by the medical practitioner. Thickening, swelling of the thigh and limitation of motion are the usual local observations, accompanied with the ordinary clinical and laboratory evidence of infection. The roentgenogram may show widening of the joint space and actual dislocation of the femoral head. The author states that dislocation is a frequent sequela of septic arthritis, but I believe that it is always present unless the condition is recognized early and proper treatment instituted. Traction in abduction or at 90 degrees suspension (the latter method being useful in infants), aspiration or even incision and the use of suitable antibiotics give the best results. The integrity of the hip joint must be preserved as far as possible: the femoral head must be kept in the acetabulum or replaced and its position maintained. In 1941 I reviewed 201 cases of suppurative joint disease involving 220 joints treated by incision and active motion. This series covered the years 1920 to 1940. None of these patients received antibiotic therapy of any kind. There were 13 deaths. The poorest results were in patients, particularly children, with involvement of the hip joint. The use of the sulfonamide drugs and penicillin is not the complete answer. Earlier common-sense surgical principles must not be forgotten but must be combined with suitable drug therapy in the treatment of these suppurative joint infections.

Dr. Joseph S. Barr, Boston: Dr. Nicholson has shown that the management of suppurative arthritis of the hip in children is a serious problem and that physicians are far from having a satisfactory answer by methods which they have used. What can be done to improve treatment? First, the pediatrician and the otolaryngologist must be alert to this problem and call in competent surgical help as soon as infection of a major joint is suspected. It is up to orthopedic surgeons to talk to pediatricians about the importance of the problem, just as Dr. Hart has been carrying the word about congenital conditions of the hips. Pressure necrosis is an important part of the problem, local pressure necrosis from a distended hip capsule. Chemotherapy is not the answer to local pressure necrosis. These hips must be drained. That can be done by repeated aspiration or by open operation, but if on aspiration one finds that there is a good deal of pressure, one must be prepared to relieve it and keep it relieved. It is not enough to aspirate the fluid once and assume that nothing more is necessary. In speaking of drainage, I believe, and I think those who have had experience with drainage agree, that posterior drainage is the proper avenue for drainage and that it should not be done anteriorly. A satisfactory posterior drainage will give a better result than anterior drainage, gravity helping with the drainage. I prefer traction rather than a cast; the traction itself produces abduction, and one does not have to worry about getting abduction if traction is used. I do not like plaster casts. If the infective organism can be identified early and it is possible to determine which of the chemotherapeutic agents is effective, one can institute proper chemotherapy. One may start treatment with a combination of drugs, but one should find out what the organism is and to which drug it is sensitive, and begin that form of therapy early. I do not believe that prolonged use of non-weight-bearing splints is effective or necessary.

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[6] Harmon, P. H., and Adams, C. O.: Pyogenic Coxitis, Surg., Gynec. & Obst. 78: 371 (April) 1944.

Dr. David M. Bosworth, New York: I would prefer anterior drainage of the hip. All one is after is decompression.

Dr. John Whitfield Larrabee, Hartford, Conn.: In less than eighteen months, there have been 3 cases of this condition at Hartford Hospital. The first case was a baby, one month premature, aged 5 days. The surgeon who was called in thought the condition was a lymphangioma or some similar thing. Aspiration of the hip resulted in a clear culture of Staphylococcus aureus. The child was not ill and did not have a rise in temperature. The second child was three months premature, also did not have any associated infection and, strangely enough, did not have fever. I do not know what the organism was. The third patient was seen only two weeks ago, and that child had no rise in temperature but did have, prior to the discovery of the lesion, an upper respiratory infection. Cases 1 and 3, then, were of Staph. aureus infections. The first 2 patients had spontaneous dislocation of the hip. I mention these because I believe that Dr. Nicholson's paper is exceedingly timely, and if one group observes 3 cases in a little more than a year, it certainly proves that the subject is timely. I would also like to say a word as to posterior versus anterior drainage. Recently a child who had had both hips drained at the age of 5 years, was seen again at the age of 10. The hip that was drained anteriorly has a badly degenerated head and poor function; but one could not tell from the roentgen examination that the hip drained posteriorly had ever been affected.

Dr. Alan DeF. Smith, New York: The frequency of suppurative arthritis of the hip is decreasing, but nevertheless it still occurs, and in many instances it has been mistreated. Patients have received antibiotics, and the pediatrician, or whoever has been taking care of them, has been depending entirely on the antibiotics to treat these infected hips. Then the patients come in with a destroyed or dislocated hip. It is extremely important to emphasize the fact and to make the physicians who see these patients originally realize that surgical treatment of the infected hip is still necessary, either aspiration or drainage, and in most cases I prefer surgical drainage. That is the important message to be gotten across in order to combat this tendency to rely entirely on antibiotics. When a hip is subjected to pus under pressure it does not take long to destroy the cartilage or to produce a dislocation. Earlier diagnosis must be made. I prefer anterior drainage.

Dr. Philip Lewin, Chicago: I believe that every child who has the basic conditions which may produce these serious changes in the hips should be put to bed. The first consideration is abduction, which can be simply accomplished by a Frejka splint. If the pediatricians, the otolaryngologists and the general practitioners could be taught that every child who has one of these anginal infections, nose infections, sinusitis or the septicemias that have been described as the causes of this condition must be put to bed with his legs abducted, I believe this would minimize the necessity for many of these osteotomies and much of the other treatment except, naturally, that of the infection.

Dr. A. Bruce Gill, Philadelphia: I believe in drainage when there is pus in the hip joint. My usual method of securing effective drainage is as follows: At a point just above and behind the great trochanter make a small incision through the skin (with the patient under local anesthesia). Continue the incision through the fascia; thrust a sharp-pointed hemostatic forceps through the incision until it strikes the neck of the femur, direct the forceps upward until it enters the hip joint, spread the blades of the forceps and withdraw it to enlarge the opening into the joint. Then by use of the forceps insert a rubber tube into the joint. This provides posterior drainage when the patient is in a recumbent position. The rubber tube can frequently be removed in a week, and the wound will heal of itself. This, of course, applies only to pyarthrosis not complicated by osteomyelitis.

Dr. David M. Bosworth, New York: This is a lateral drainage.

Dr. A. Bruce Gill, Philadelphia: It is a posterolateral incision, but it secures posterior drainage of the hip joint.

Dr. Paul Hugenberger, Boston: I agree with the comments of the last few discussants. Early diagnosis in sepsis of the hip is absolutely essential, and early proper chemotherapy and drainage is important. It must be remembered that some of these infections are secondary to osteomyelitis of the neck or the region about the hip, and there is drainage into the joint. In these cases repeated drainage, often by needle, is not adequate and loss of the femoral head will result. Also, the pus in many instances is entirely too thick to be adequately removed by needle. I believe that needle aspiration repeated in some cases is satisfactory, but in most cases early posterior drainage with traction, with the early chemotherapy, will give the best result.

AUREOMYCIN THERAPY IN HUMAN BRUCELLOSIS DUE TO BRUCELLA ABORTUS

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In a previous study conducted in México, D. F., aureomycin was found to produce more satisfactory immediate results than any other specific therapy in the treatment of brucellosis due to Brucella melitensis.[1] These results were characterized by prompt clinical improvement, sterilization of the blood and absence of serious side effects. A second group of patients, in whom the infection was caused by Brucella abortus, were treated successfully with aureomycin in Minneapolis, and the present report describes the effect of aureomycin in these 16 patients with bacteriologically proved brucellosis.

METHODS OF STUDY

Aureomycin was administered orally to 16 consecutive patients from whose blood Br. abortus was isolated by culture (table 1). In every case the severity of symptoms necessitated hospitalization. In 7 patients the duration of symptoms was less than two months. These 7 patients were considered to have acute infections. In the remaining 8 patients the symptoms were present longer than four months, and their illnesses were regarded as chronic. The ages ranged from 18 months to 60 years. Fourteen patients were male and only 2 were female. The number of isolations of Br. abortus from the blood before treatment varied in each patient from one isolation to as many as nine. In 6 patients there were either other diseases or compli-

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From the Division of Internal Medicine, University of Minnesota Hospitals and Medical School, and from the Medical Service of the Veterans Administration Hospital.

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[1] Spink, W. W.; Braude, A. I.; Castaneda, M. R., and Sylva-Goytia, R.: Aueromycin Therapy in Human Brucellosis Due to Brucella Melitensis, J. A. M. A. **138**: 1145 (Dec. 18) 1948.

cations due to brucellosis. Arthritis of the hip was observed in 2 boys. A severe anemia of infancy was present in a child aged 18 months. The urine of 1 patient contained large amounts of albumin and leukocytes. In this patient intense jaundice also developed after skin tests were performed with Brucella antigens. These skin tests were not performed for diagnostic purposes but as part of an immunologic study on brucellosis. A diagnosis of chronic nephritis was made in 1 patient who was also found to have residual neurologic abnormalities following a stroke. Intestinal amebiasis was present in a veteran of the last war. Seven patients had been treated previously with other drugs or vaccines, but only 1 had been given a combination of streptomycin and sulfadiazine.

Table 1.—*Treatment of Brucellosis by Means of Aureomycin: Summary of Acute and Chronic Cases Due to Brucella Abortus*

	Acute	Chronic
Duration	1 wk. to 2 mo.	4 mo. to 5 yr.
Age	17 to 56	1½ to 60
Sex: Male	7	7
Female	1	1
Number positive cultures before treatment	1 to 9	1 to 4
Cases with complications	Pyelonephritis and jaundice... 1 Arthritis of hip.. 1	Arthritis of hip.. 1 Anemia.......... 1 Amebiasis....... 1 Hemiplegia, chronic nephritis 1
Previous therapy	1	6

The total dose of aureomycin given to each patient varied. In most cases a total of 2 Gm. of the drug was administered daily in four divided doses at intervals of six hours. Smaller amounts were given to 2 small children. One child 3 years of age received 600 mg. of the agent daily. The infant aged 18 months was given 1 Gm. daily. The minimum period of treatment was ten days, and the maximum period was eighteen days. Blood cultures were obtained before and after treatment in each case. After the treated patients were discharged from the hospital, they returned at regular intervals for physical examinations and blood cultures.

Table 2.—*Dose of Aureomycin and Its Effect on the Fever in Acute Infections Due to Brucella Abortus*

Case	Total Dose in Gm.	Duration of Treatment, Days	Duration of Fever After Initiation of Treatment, Days
1	16.25	18	7
4	24	12	3
	51	18	3
5	32	14	3
6	26	13	4
9	20	10	0
11	20	10	4
12	20	10	6
16	22	11	7

RESULTS

Decided improvement was observed in every patient soon after treatment with aureomycin was started. A decline in temperature frequently took place within one or two days after therapy began. With 3 exceptions, all treated persons had become afebrile by the end of the fourth day and the longest period of fever was only seven days (tables 2 and 3). Subjective symptoms such as weakness, nervousness, generalized aches and chilliness also subsided promptly. One of the earliest signs of improvement was the cessation of severe drenching sweats.

When splenomegaly was demonstrated, the size of the spleen began to diminish by the second or third day of treatment in some patients. This was not necessarily followed, however, by complete recession of the spleen under the costal margin. In case 7 (table 4) the tip of the spleen was still palpable on examination three months after the completion of treatment, although the patient had been well in every other respect.

A summary of the clinical and laboratory features in each case is given in table 4. Response to therapy was generally as satisfactory in patients with complications as in the uncomplicated cases. Case 1 was that of a young worker in a packing house who became jaundiced on the eighth day of treatment, at which time the serum bilirubin rose to a total of 6.1 mg. per hundred cubic centimeters. No other laboratory abnormalities were noted among a battery of liver function tests, and the use of aureomycin was continued. The jaundice disappeared and general recovery was uneventful. It is of interest that skin tests with four Brucella antigens were applied simultaneously four days before the jaundice became evident. The reactions were strongly positive and were associated with a severe constitutional reaction occurring three hours after injection of the antigens. A biopsy specimen of the liver was taken two days after jaundice was noticeable, and on microscopic examination there were observed numerous large granulomas typical of those described in other cases due to infection by Br. abortus.[2] However, aside from the granulomas there were no abnormalities. A diagnosis of chronic pyelonephritis was also made in this patient on the basis of albuminuria and pyuria, although repeated cultures of the urine for Brucella and other organisms remained sterile. The abnormal urinary observations persisted after treatment.

Table 3.—*Dose of Aureomycin and Its Effect on the Fever in Chronic Infections Due to Brucella Abortus*

Case	Total Dose in Gm.	Duration of Treatment, Days	Duration of Fever After Initiation of Treatment, Days
2	28.0	14	2
3	8.6	14	2
7	25.6	14	1
8	20.0	10	2
10	26.0	14	2
13	37.0	16	1
14	28.5	16	0
15	14.0	14	0

A diagnosis of infectious arthritis of the hip was made in each of 2 boys. The older of these (case 2) was 12 years of age, and the involvement of his hip occurred one year after an acute illness during which Br. abortus was cultured from his blood.[3] He remained in apparent good health during the intervening year and then noticed the onset of fever, pain in the left hip and a limp which involved the left leg. A flexion contracture of the left hip was found on examination, and Br. abortus was cultured from fluid aspirated from the joint. The flexion contracture disappeared forty-eight hours after the first dose of aureomycin, and all pain and soreness was absent within four days. The younger boy (case 3) was 3 years of age. His illness was also characterized by a long latent period between the time of the acute infection and the development of symptoms referable to his hip.[4] In this case six months elapsed following apparent recovery from the initial symptoms before the child began to limp and to complain of pain in the hip. A diagnosis of poliomyelitis was temporarily considered because of the severe muscle spasm about the involved right hip. There was rapid cessation of pain in the joint as well as muscle spasm coincident with the use of aureomycin, although cultures of the blood remained positive after treatment was completed. A recent report from his father, six months after the conclusion of therapy, stated he was in good health. He had received a second course of aureomycin at home.

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[2] Spink, W. W.; Hoffbauer, F. W.; Walker, W. W., and Green, R. A.: Histopathology of the Liver in Human Brucellosis, J. Lab. & Clin. Med. **34**: 40 (Feb.) 1949.

[3] This boy was studied from the clinical material of Dr. Vernon Hart of Minneapolis.

TABLE 4.—*Clinical Data on 16 Patients with Brucellosis Due to Brucella Abortus and Treated with Aureomycin*

Case	Age	Sex	Duration of Illness Before Treatment	Number of Positive Cultures	Complications	Previous Therapy	Total Dose	Side Effects	Results and Comments
1	19	M	1 mo.	Blood 2	Albuminuria, jaundice	None	16.25 Gm.	None	Recovered from brucellosis and jaundice; pyuria and albuminuria persist after treatment; 8 negative blood cultures; well for 3 mo.
2	12	M	12 mo.	Blood 1 Hip 1	Arthritis of left hip	Penicillin and sulfadiazine	28 Gm. in 14 days	None	Complete cessation of symptoms and observations referable to involved hip; no recurrence for 6 mo.
3	3½	M	5 mo.	Blood 3	Arthritis of right hip	None	8.6 Gm. in 14 days	None	Clinical recovery but persistence of bacteremia and slight fever after treatment
4	17	M	1 mo.	Blood 4	None	None	24 Gm. in 12 days 51 Gm. in 18 days	None Epigastric pain	Became afebrile and asymptomatic after 3 days of treatment; remained well 1 mo., then became febrile again; 11 blood cultures negative after first course of aureomycin; *complete recovery* and no recurrence 5 mo. after second course of aureomycin
5	56	F	1 mo.	Blood 2	None	None	32 Gm. in 14 days	None	Uneventful and complete clinical recovery; 3 negative cultures after treatment; no recurrence for 4 mo.
6	25	M	1½ mo.	Blood 3	None	Penicillin	26 Gm. in 13 days	None	Complete clinical recovery; no recurrence 6 mo.
7	33	F	7 mo.	Blood 4	None	Vaccine	25.6 Gm. in 14 days	Nausea, epigastric pain	Became afebrile on second day of treatment; blood culture still positive on eighth day of treatment but bacteremia, symptoms and fever had all ceased by end of treatment; no recurrence for 3 mo.; 4 cultures negative
8	23	M	13 mo.	Blood 2	None	None	20 Gm. in 10 days	None	Afebrile after 48 hr.; clinically well 2 mo.; 3 negative blood cultures
9	22	M	2 mo.	Blood 2	None	None	20 Gm. in 10 days	None	Recovered; no recurrence for 2 mo.; 6 negative blood cultures
10	47	M	4 mo.	Blood 3	None	Streptomycin 23 Gm. and sulfadiazine *90 Gm., 16 days*	28 Gm. in 14 days	None	Clinical recovery with aureomycin after unsuccessful therapy with streptomycin and sulfadiazine; no recurrence 6½ mo.
11	29	M	3 wk.	Blood 1	None	None	20 Gm. in 10 days	None	Clinical recovery; no recurrence 3 mo.; 5 negative blood cultures
12	31	M	1 wk.	Blood 5 Bone marrow 1	*Amebiasis*	*None*	20 Gm. in 10 days 20 Gm. in 10 days	Nausea, vomiting, diarrhea None	Recovery from brucellosis and also from amebiasis; stools became free of tropozoites and blood, free of Br. abortus; 19 blood cultures negative after treatment, but symptoms and fever appeared 1 mo. after treatment; recovered with *second course*
13	26	M	5 yr.	Blood 1	None	Vaccine, sulfadiazine, streptomycin, penicillin	37 Gm. in 16 days	Nausea, epigastric pain	Afebrile after 1 day; no recurrence 5 mo.
14	30	M	1 yr.	Blood 5	Hemiplegia; chronic nephritis	Streptomycin 16 Gm. and sulfadiazine, 11 days	28.5 Gm. in 16 days	Indigestion, epigastric pain	Afebrile before therapy; improved 4 mo.; died suddenly of cerebrovascular accident
15	1½	M	1 yr.	Blood 2 Bone marrow 1	Anemia of infancy	None	7.8 Gm. in 8 days	None	Decided gain in appetite, weight and energy in infant aged 18 mo.
16	35	M	1 mo.	Blood 2 Bone marrow 1	None	None	22 Gm. in 11 days	None	Clinical recovery in an acutely ill *patient*

Case 15 was an example of an unusual complication of brucellosis. The patient was an infant in whom a severe hypochromic microcytic anemia was observed. The main physical abnormalities were enlargement of the liver and spleen. By the fourth day of treatment with aureomycin the spleen had receded from 4 to 1.5 cm. below the costal margin and the liver was no longer palpable. Six weeks after completion of treatment the hemoglobin had risen *from 8.7 to 10.9 Gm.* per hundred cubic centimeters of blood.

In 2 patients there were complicating illnesses in addition to brucellosis. In case 14 chronic nephritis was present. This patient, a farmer aged 61, had been stricken by a partial hemiplegia of the left side, and at the time of treatment, one year after the cerebral accident, residual neurologic abnormalities were still found. There was some doubt as to the relation of brucellosis to the cerebral and renal complications. Before receiving aureomycin he had been treated with a combination of streptomycin and sulfadiazine. This produced some improvement, but Br. abortus was cultured from his blood on two occasions after this treatment was discontinued. Administration of aureomycin was followed by appreciable gain in strength and no recurrence of bacteremia. He died suddenly in a rural area six months after leaving the University Hospitals. An adequate postmortem examination was not performed.

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[4] This and the following patient were studied on the Pediatrics' Service of the University Hospitals, through the cooperation of Dr. Irvine McQuarrie.

Another patient, a veteran of World War II, was found to be passing large numbers of trophozoites and cysts of Endameba histolytica in his stools. In this case aureomycin not only acted against Br. abortus but also eliminated E. histolytica from the stools, the trophozoites rapidly disappearing and not returning during a period of observation of three months.

RELAPSES

Brucella has been cultured from the blood of only 1 patient after treatment (case 3). The total dose of aureomycin was reduced to only 8.6 Gm. in fourteen days because the boy was only 3 years of age. In spite of the persistent bacteremia there was an excellent clinical response and, except for a slight fever, there were no signs of clinical relapse. It is possible that bacteremia persisted because an insufficient amount of aureomycin was given. A second course of aureomycin apparently eliminated the infection.

TABLE 5.—*Relapses Occurring in Patients Treated with Aureomycin for Infections Due to Brucella Abortus*

Time Elapsed	Number of Cases	Clinical Relapse Only	Bacteriologic Relapse Only
4 to 7 mo.	6	0	0
2 to 4 mo.	6	0	0
Less than 2 mo.	4	2	1
Total	16	2	1

Two patients became febrile and had other manifestations of clinical relapse after all symptoms had temporarily subsided (cases 4 and 12). Blood cultures from both patients remained sterile, although numerous attempts were made to isolate Brucella during the course of apparent relapse. In both cases there was reason to suspect that the recurrence of fever was caused by a process other than active brucellosis. In case 4, for example, pharyngitis developed and the patient had enlarged cervical lymph nodes which were suggestive of a primary infection of the pharynx. Cultures of material from the throat were negative for bacteria; heterophile antibodies and leukocytoid lymphocytes did not appear in the blood. In case 12 it could not be determined for certain whether the return of symptoms was caused by an exacerbation of the amebic infection or by the brucellosis. Neither organism was isolated. The symptoms were more characteristic of brucellosis and disappeared after a second course of aureomycin (20 Gm. in ten days).

Table 5 summarizes the results from the standpoint of bacteriologic and clinical failures or relapses. The clinical relapses both occurred within one month after the cessation of treatment, and the bacteriologic failure was discovered immediately.

SIDE EFFECTS OF AUREOMYCIN

Aureomycin was well tolerated by the 16 patients. Only 5 patients complained of symptoms which might have been caused by the drug. These are summarized in table 6. Epigastric pain and nausea were experienced but were never so serious that aureomycin could no longer be given. In 6 patients an abrupt rise in temperature occurred during the first forty-eight hours of treatment. This phenomenon was previously noticed in 12 of 24 patients in México, D. F., who were treated with aureomycin for infections due to Br. melitensis; in the latter group the rise in temperature was sometimes accompanied with symptoms and signs of shock.[1] It appeared necessary to minimize these effects in the Mexican patients by reducing the first daily dose of aureomycin to 0.1 Gm. and then gradually increasing the dosage. In the present study, however, the early spike of fever was not associated with any distressing manifestations and there was no need to initiate treatment with small doses.

TABLE 6.—*Side Effects Associated with the Oral Administration of Aureomycin in 16 Patients Treated for Brucellosis Due to Brucella Abortus*

No side effects	11
Side effects	5
Epigastric	4
Nausea	3
Vomiting	1

COMMENT

Aureomycin has been of benefit, immediately and consistently, to all the 40 patients treated in Minneapolis or at the Hospital Generale in México, D. F. It appears to be dependable in the treatment of human brucellosis if the infection is caused by Br. melitensis or Br. abortus. Infections due to Brucella suis have also been treated with aureomycin, but the number of reported cases is small.[5]

A rough comparison can be made between the effectiveness of aureomycin and that of combined treatment with streptomycin and sulfadiazine. In table 7 two groups of 16 consecutive cases with treatment by each method are considered from the standpoint of clinical and bacteriologic relapses or failures. This comparison of aureomycin with a combination of streptomycin and sulfadiazine suggests that there is little difference in the over-all results in infections due to Br. abortus. In certain respects, however, the use of aureomycin is unquestionably superior to the combined use of the other two drugs. Aureomycin produces almost immediate improvement in the subjective well-being of the patient and a rapid fall in temperature. Its oral administration is easy and free from dangerous side effects. Hospitalization is not necessary. Treatment with streptomycin and sulfadiazine has not been consistently attended by rapid improvement in symptoms or fever,

TABLE 7.—*Treatment of Brucellosis Due to Brucella Abortus: Comparison of the Results Obtained Using Aureomycin with Those Obtained Using a Combination of Sulfadiazine and Streptomycin*

	Aureomycin	Sulfadiazine-Streptomycin
Period of observation	2 to 8 mo.	2 to 14 mo.
Total number of cases	16	16
Number clinical relapses	2	1
Number bacteriologic relapses or failures	1	3

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5. Bryer, M. S.; Schoenbach, E. B.; Wood, R. H., and Long, P. H.: The Treatment of Acute Brucellosis with Aureomycin, Bull. Johns Hopkins Hosp. **84**: 444, 1949. Schoenbach, E. B.; Bryer, M. S., and Long, P. H.: The Pharmacology and Clinical Trial of Aureomycin: A Preliminary Report, Ann. New York Acad. Sc. **51**: 267, 1948.

and the well known side actions may be serious. Would there be any advantage of combining aureomycin therapy with streptomycin or dihydrostreptomycin, or with sulfadiazine? Heilman[6] reported that the simultaneous administration of aureomycin and dihydrostreptomycin to experimentally infected mice reduced the numbers of Brucella organisms in the spleen more decidedly than did either agent alone. In observations made in this clinic Magoffin, Anderson and Spink[7] noted that the combination of aureomycin and streptomycin, and aureomycin and sulfadiazine, had a more pronounced anti-Brucella action in the chick embryo than did any one of the drugs when given alone. The only recorded observations in human subjects are those of Herrell and Barber,[8] who administered a combination of dihydrostreptomycin and aureomycin to 4 patients with brucellosis. Two of the infections were due to Br. suis and 2 were due to Br. abortus. A satisfactory response to this combination of drugs was noted, and it was concluded that aureomycin and dihydrostreptomycin should be employed in the treatment of human brucellosis, although control data on the use of aureomycin alone were not reported. The present study, as well as that conducted in México, D. F., indicates that in the routine treatment of infections due to Br. abortus or Br. melitensis little is to be gained by the additional use of dihydrostreptomycin, the administration of which is attended by inconvenience and discomfort for the patient as well as possible serious toxic effects.[9] Even if relapses do occur after an initial course of aureomycin, a second course of treatment can be given, often with success.

A daily dose of 2 Gm. of aureomycin administered over a period of ten days to two weeks was adequate for most patients. In case 1 there was complete recovery in an adult after a daily dose of only 1 Gm. given for eighteen days. The only example of bacteremia after treatment was case 3, in which the daily dose was reduced to 600 mg. for two weeks. Although this was the smallest quantity of aureomycin taken by any patient in this series, the amount per kilogram of body weight was more than that given to others (the patient was a small child weighing 30 pounds, 13.6 Kg.). In a previous report it was suggested that a daily dose of 4 to 6 Gm. of aureomycin might be desirable for treating infections due to Br. melitensis.[2] In most cases in which the infection is due to Br. abortus or Br. melitensis there is probably no advantage in giving more than 2 Gm. of the antibiotic a day.

SUMMARY AND CONCLUSIONS

1. Aureomycin was used in 16 bacteriologically proved cases of brucellosis due to Brucella abortus. Rapid and striking clinical improvement occurred in all patients after treatment. Bacteremia persisted after treatment in only 1 patient, and a clinical relapse occurred in 2 others.
2. Aureomycin is now known to be effective in the treatment of human brucellosis due to Br. abortus and Brucella melitensis.

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[6] Heilman, F. R.: The Effect of Combined Treatment with Aureomycin and Dihydrostreptomycin on Brucella Infections in Mice, Proc. Staff Meet., Mayo Clin. **24:** 133, 1949.

[7] Magoffin, R.; Anderson, D., and Spink, W. W.: Therapy of Experimental Brucella Infection in the Developing Chick Embryo: IV. Therapy with Aureomycin, J. Immunol. **62:** 125, 1949.

[8] Herrell, W. E., and Barber, T. E.: The Combined Use of Aureomycin and Dihydrostreptomycin in the Treatment of Brucellosis, Proc. Staff Meet., Mayo Clin. **24:** 138, 1949.

[9] Allison, S. T.; Volk, R., and Vitagliano, G. R.: Dihydrostreptomycin in the Treatment of Pulmonary Tuberculosis with Particular Reference to Its Toxicity As Compared with that of Streptomycin, New England J. Med. **241:** 52, 1949.

LESIONS OF THE SHOULDER

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Many patients complain of pain in the shoulder, but in any pain, diagnosis must precede treatment. Shoulder pain presents a diagnostic problem which must be approached by the routine path, the careful recording of the history of the patient, followed by physical examination and special investigation where necessary. I have recently found instances in which the patient's own complaint of shoulder pain has been accepted without investigation, and physical therapy has been directed to it although the primary cause of the pain has lain outside the shoulder. Similarly, I have read in a so-called textbook the statement that one should accept the syndrome of the painful shoulder without considering the underlying pathologic condition which is causing the pain and that he should prescribe treatment on this basis. Such a statement allows one to form an opinion of the author and his book.

The causes of shoulder pain can be divided between those which lie in the anatomic structures connected with the shoulder joint and those which lie outside these structures. In England we speak of fibrositis of the periarticular tissues of the shoulder joint. This I regard as a generic term which can be used far too loosely and which often covers a multitude of conditions. The commonest lesion of this type in the shoulder is a subdeltoid or subacromial bursitis which may or may not be associated with a lesion of the supraspinatus tendon. This lesion is frequently traumatic in origin, and in some cases calcareous deposits form in the supraspinatus tendon or in the bursa. The patient complains of pain in the shoulder which is relieved by rest but aggravated by movement, especially the movement of abduction. Elevation may be difficult, and active elevation farther than 90 degrees may have to be carried out by an external rotatory movement, which is typical of a lesion in the supraspinatus tendon. In this condition of bursitis, roentgen examination may reveal nothing, or, in other cases, calcareous deposits may be seen in the supraspinatus tendon. There are other conditions affecting the muscles around the shoulder joint, among them true fibrositis, which may be toxic, traumatic or infectious in origin. In these cases it is probable that immobilization due to pain is often the primary cause of secondary fibrositic changes. The symptom will be pain on movement of the shoulder, which initially may be aggravated but later will be relieved by activity. In long-standing cases there will be limitation of movement.

I think it is important to realize that primary arthritis of the shoulder joint is a rare condition. The shoulder is commonly affected in a general rheumatoid arthritis, but in these cases the shoulder is part of a much larger problem. Osteoarthritis of a shoulder joint is uncommon, for it is not a weight-bearing joint and is not subjected to the stress and strains of joints such as the hip and knee. Many of the movements carried out at the shoulder joint involve drawing the head of the humerus out of the glenoid cavity and thereby separating the joint surfaces. Thus osteoarthritis is not likely to occur. Osteoarthritis may occur at the acromioclavicular joint. This is an uncom-

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mon condition in which pain is referred to the acromioclavicular region and is aggravated by movement at this joint; radiologic examination will confirm the diagnosis of osteoarthritis. Primary arthritis of the shoulder joint frequently may be diagnosed, but it is not a common condition.

The intrinsic conditions of the shoulder which I have mentioned all share one common end result: if they are neglected they may rapidly develop into the frozen shoulder. In this condition the capsule of the shoulder joint becomes thickened, shortened and adherent to tissues and bone surface. Any movement of the shoulder causes pull on this pathologically thickened capsule, and pain results. Pain causes the patient to desist from movement, and thus a vicious circle is established in which prolonged rest causes adhesions; adhesions cause pain, and pain calls for rest.

Extrinsic conditions which secondarily affect the shoulder joint are commonly met in practice. I would list brachial neuralgia as first of these. In England this is a common syndrome, but after discussing it with my American colleagues I am under the impression that it is not so common here. It is often manifested as a pain in the region of the shoulder and because of this is often erroneously diagnosed. It may be caused by cervical osteoarthritis, protrusion of a cervical intervertebral disk or, much more commonly, to pull on the brachial plexus caused by drooping of the shoulder girdle, a type of lesion known as the scalenus anticus syndrome. A cervical rib may cause it, but this is not usual. In brachial neuralgia the pain radiates anatomically along the distribution of the affected nerve roots and is particularly liable to occur while the patient is at rest and during the night, in contradistinction to the pain of bursitis and fibrositis. In the early stages of brachial neuralgia movement may be full and may not evoke the typical pain.

Another important cause of secondary shoulder pain is trauma anywhere in the upper limb when it is being treated by absolute rest of the whole limb. The sling in which the patient carries an arm which has suffered a fractured radius may be an important cause of a frozen shoulder, for the shoulder joint will soon become fibrotic if it is not moved. Formerly one saw more patients in whom injury or infection of a finger, or a fracture in the region of the wrist, had led to stiffness of the elbow and fixed adduction of the shoulder. A trap into which the unwary may fall is demonstrated by the patient in whom cardiac pain is referred to the shoulder. In my clinic every year a few patients with angina caused by effort are sent along with a request for physical therapy. It is most important in these cases that the true cause of the pain be recognized.

Again one must stress the fact that the extrinsic, as well as the intrinsic, causes of shoulder pain can be responsible for a frozen shoulder. This must be borne in mind when prescribing treatment.

In the treatment of all intrinsic lesions of the shoulder joint, one aims at the eventual restoration of full and painless movement. Such an aim entails certain fundamental principles in the prescription of treatment, and these principles can be applied, whatever the etiologic nature of the lesion. First, the shoulder must not be allowed to remain for long at rest in adduction; second, the patient's own efforts must be directed toward maintaining voluntary movement of the muscles acting around the joint, and also toward maintaining the tone of these muscles. The correct position of rest for a painful shoulder is in abduction, and it is in this position that the shoulder joint must be splinted if splinting is necessary. At the same time, active muscular contractions must be encouraged.

In lesions of the subdeltoid bursa and the supraspinatus tendon, heat is valuable for its effect in restoring and improving the circulation and in soothing pain. The increased vascularity resulting from heat therapy can cause the absorption of calcareous deposits in the supraspinatus tendon. It can be most gratifying to see, in serial roentgenograms, such deposits gradually disappearing. In the majority of cases the intrinsic shoulder lesions respond well to physical therapy; however, a shoulder already limited in motion, in which fibrous adhesions have formed, may call for patience and persistence on the part of the physician and physical therapist and for courage and perseverance on the part of the patient in stretching and breaking down his own adhesions. Faradization, roentgen therapy, hydrotherapy and, in a small proportion of cases, manipulation with the patient under general anesthesia may be necessary. Again it is important to remember that the position of rest for the shoulder after manipulation should be abduction. Injections of agents for local anesthesia are often of value in relieving pain and may thereby assist in breaking a vicious circle. In some cases of supraspinatus tendinitis which do not respond to more conservative forms of treatment the orthopedic surgeons may go so far as to remove the acromion. I know patients who have responded well to this maneuver when all else has failed.

In treatment of the extrinsic lesions which may cause freezing of the shoulder joint the same principles of maintaining abduction of the shoulder must be followed. The treatment of brachial neuralgia, a condition met frequently in England, depends largely on the cause. Thus, a brachial neuralgia resulting from the protrusion of a cervical intervertebral disk or from cervical osteoarthritis will need treatment directed at the source of pain, and the patient complaining of pain in the shoulder and arm may be surprised to find treatment with short wave diathermy prescribed for the neck. But this can prove most effective, and its effect is enhanced if active exercise is prescribed at the same time. In the scalenus anticus syndrome heat and shoulder-raising exercises combined with the judicious administration of analgesic drugs proves successful in most cases. It is the exception rather than the rule that such patients must be subjected to operative procedures.

In treating patients suffering from trauma of the upper limb, the situation must be explained, and the dangers of allowing the shoulder to become stiff must be made clear. Now that plaster has replaced the wooden splint and the supreme value of active exercise is understood, one does not see secondary stiffness of the shoulder as often as formerly, but there is still danger, when a sling is used, that the local lesion may resolve satisfactorily but the patient may be left with a stiff and painful shoulder.

SUMMARY

The shoulder is a vulnerable joint which may be affected by both intrinsic and extrinsic factors. The fundamental objectives in treatment are to relieve pain and to maintain movement and musculature while the painful condition is being cured. The danger that a stiff and painful frozen shoulder may result must always be borne in mind.

ABSTRACT OF DISCUSSION

DR. SVEND CLEMMESEN, Copenhagen, Denmark: It is necessary to evaluate all the different causes of pain in the shoulder and then to make a diagnosis and select the treatment for each case. This specialty of physical medicine and rehabilitation is not so uncommon. It has a central place in medical practice. Liaison is needed between physical medicine and rehabilitation. It has been impossible for me to translate the word rehabilitation into the Danish language. Since this new concept was born in the United States and Great Britain, I think we will keep the word rehabilitation.

DR. BROR TROEDSSON, Orange, N. J.: This is one of the best papers on lesions of the shoulder that I have ever encountered. At a conference on the shoulder which I attended recently, extremely confusing nomenclature was used. I want to make a plea for extremely close study of shoulder conditions and an exact diagnosis in each case. Twenty years ago in most of the cases referred to me the diagnosis was neuritis. Later it became popular to make a diagnosis of bursitis. Today there are in my files thirty-five different types of shoulder conditions. The term frozen shoulder was first used by Dr. Codman in his book, "The Shoulder," a standard textbook in the United States. He stated that the term frozen shoulder should be used as synonymous with periarthritis humero scapularis, as described by Duplay. I think physicians should reserve that term for the condition described by Duplay in his paper published in 1872. To my mind it is a specific clinical entity. That term should not be used for stiff shoulders which result from trauma, bursitis or peritendinitis calcarea. If there were a uniform nomenclature, greater progress in the treatment of shoulder conditions would rapidly be made.

DR. NICHOLAS MAURIELLO, Wilkes-Barre, Pa.: I would like to ask Dr. Tegner whether his experience with ionization of iodine, procaine hydrochloride and histamine has been satisfactory in the treatment of bursitis. If physicians are going to prescribe active movements for these patients, salicylates and codeine will have to be given to them.

DR. G. HIRSCHBERG, Bronx, N. Y.: I should like to ask Dr. Tegner two questions concerning shoulder pain in patients with myocardial infarction. First, is it possible to relieve this pain by physical treatment, and, if so, which modality should be applied? My other question concerns the prevention of a frozen shoulder in these cases. Early active and passive motion may be contraindicated because of the cardiac status. Should immobilization in abduction be used?

DR. HOWARD A. RUSK, New York: So-called pulley therapy has been extremely valuable in the management of these shoulder problems, especially in the hemiplegic person. The patient, knowing his own threshold with pulley therapy, will proceed much faster with active motion than if the work is done by a physician or a physical therapist.

One danger in the scalenus anticus syndrome is illustrated by a case in which I was consulted; the patient was on the operating table, just having had the muscle severed. The tension is so great that when the muscle is cut it will often snap like a violin string. This patient went into shock on the operating table. No cause could be immediately seen, but within two hours his heart was displaced to the right and the aspiration needle in the chest brought out a milky fluid. It was obvious then that the thoracic duct had been severed by the snap of the muscle. With repeated thoracenteses over a period of several days the duct closed, and the patient made an uneventful recovery. However, this is a difficult and frightening situation.

DR. TEGNER, London, England: I agree with Dr. Rusk about the value of pulley therapy; it fits in well with my advocacy of the patient's own efforts. In treating these lesions with such procedures as pulley therapy, the physician must encourage the patient and tell him that he must endure a certain amount of pain if he wants to get restoration of function. Of course, codeine and salicylates must be administered. With the exception of the histamine-like substances, I have not found iontophoresis a particularly helpful procedure. If I want to give procaine hydrochloride, I use the needle rather than ionization. However, for increased vascularity histamine iontophoresis may be valuable. Dr. Hirschberg made an important point when he stated that I had mentioned myocardial conditions and had not bothered about them much further. These patients who are referred to us with cardiac pain are in danger that a secondarily fibrosed shoulder may develop. I do not use the term frozen shoulder in this condition. These patients must be treated on an individual basis. I do not put them into the large therapy groups for exercise. Normally, exercises are given for groups of 10 or 15 patients, who are encouraged in competition with each other in enjoying their exercises. That is out of the question in regard to the patients with cardiac disease, for whom treatment must be carried out individually and carefully, under strictly controlled conditions. But they must be given treatment. In regard to relief of cardiac pain, I believe that one cannot help particularly, other than by administration of glyceryl trinitrate and similar drugs. In my own hospital, the wards where the tuberculous patients are treated are visited every day by a physical therapist under my direction. These patients do exercises in which we try to combine group methods and individual methods. One cannot institute a strong program of breathing exercises, but the patients are treated with physical therapy, which starts with gentle hand and finger movements. It is a routine, but the local treatments must be prescribed with the greatest care and, possibly, with conservatism.

AEROBACTER AEROGENES INFECTION OF THE URINARY TRACT

Effective Treatment with Aureomycin

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A remarkable sudden increase in the incidence and pathogenicity of Aerobacter aerogenes (Bacillus lactis aerogenes) in the genitourinary tract was reported from the Beth Israel Hospital by Wilhelm and Orkin[1] in 1948 (published in 1949). At that time this organism was found, either in pure form or in association with other organisms, in the urine of 49.2 per cent of 257 consecutive patients admitted to the urologic service. Studies made subsequently by us in 100 consecutive admissions revealed that A. aerogenes was present in the initial urine cultures of 50 per cent of these patients and that the organism was recovered in later cultures in 75 per cent of the patients at some time during their hospital stay. Bacteremia caused by A. aerogenes was proved in 24 patients, 7 of whom died. In one of the fatal cases, suprapubic prostatectomy was complicated by an acute bacterial endocarditis.[2] At autopsy, cultures of material both from the prostate and from vegetations on the aortic valve showed a pure growth of A. aerogenes.

Almost all the patients with A. aerogenes infection of the urinary tract suffered from related symptoms. The organism was frequently recovered in pure culture from the infected organ at the operating table

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This study has been aided by a financial grant from Mr. Joseph Jacobs.

From the Urological Surgical Service and the Laboratories, Beth Israel Hospital.

[1] Wilhelm, S. F., and Orkin, L. A.: The Increased Pathogenicity of Bacillus Lactis Aerogenes in Urinary Tract Infections, J. Urol. **61**: 131, 1949.

[2] Sussman, L. N.; Cohen, I. B., and Freund, A. V.: Acute Aerobacter Aerogenes Endocarditis Complicating Genito-Urinary Tract Infection, N. Y. State M. J., to be published.

from excised surgical specimens or, later during the postoperative course, from infected wounds. We have also observed that several patients in whom epididymitis developed following prostatectomy did not respond to the usual conservative therapy, but instead the condition became suppurative. Cultures of material removed at operation revealed growth of A. aerogenes. Three patients with bacteremia caused by A. aerogenes were cured by excision of an infected renal focus.

These observations afford ample proof that A. aerogenes is now usually pathogenic in the genitourinary tract, often giving rise to grave, and at times fatal, infection. This problem has not been confined to one hospital or city. Since the initial observations were reported, we have been informed of similar experiences in other clinics throughout the country. In a series of persons with paraplegia Owen and Finch[3] recently found that 62.4 per cent had A. aerogenes urinary infection.

The importance of discovering an efficacious drug for the eradication of A. aerogenes infection of the urinary tract needs little further emphasis. Contrary to most early reports in the literature, one of us (E. S.) found that 85 per cent of the strains of A. aerogenes cultured at the Beth Israel Hospital were resistant to streptomycin. Except for infection caused by the remaining small number of streptomycin-sensitive strains, specific treatment was not available. Most of the commonly used drugs (penicillin, sulfadiazine, sulfacetimide, sulfamerazine, NU-445 [3,4-dimethyl-5-sulfanilamido-isoxayole] and methenamine mandelate [mandelamine®]) had been tried, singly and in combination, with little if any success.

The evaluation of successful management of infections of the urinary tract obviously depends on careful bacteriologic studies. During our experiments with various antibiotic and chemotherapeutic agents, we have made urine cultures prior to the beginning of treatment, every other day during the course of treatment and at frequent intervals during the follow-up period. Two sterile cultures after the conclusion of therapy were the minimal criteria of cure.

CLINICAL EXPERIMENTS

Sulfathiazole.—During the years 1940 to 1941 we studied 12 patients with A. aerogenes infection of the urinary tract. Each patient had received sulfathiazole, and in each the organism disappeared in six months to seven years. Because of this observation, 18 patients with infection due to A. aerogenes were treated by administration of sulfathiazole in a dosage of 1 Gm. four times daily for at least seven days. There were four successes and fourteen failures; 22 per cent were cured.

Sodium Mandelate.—Carroll and his associates[4] found that A. aerogenes was sensitive to a 0.1 per cent concentration of mandelic acid, and at his suggestion we treated 43 consecutive patients with intravenous injections of sodium mandelate. Twenty-five cubic centimeters of a 20 per cent solution of this drug was administered daily for a period of five to seven days. About one third of the patients received an additional daily injection with no appreciable change in the results. Seventeen of the 43 patients (40 per cent) were cured bacteriologically, whereas the remaining 26 were unaffected by the therapy. Although toxic manifestations were not encountered, the intravenous injection of sodium mandelate has the disadvantage of requiring hospitalization and considerable medical and nursing care. A good venous system is required, and phlebitis was not uncommon among patients receiving sodium mandelate therapy.

Methenamine Mandelate.—Fifty patients with persistent A. aerogenes urinary infection were treated with methenamine mandelate. Four tablets of the drug were administered four times daily for as long as five weeks. The patients were instructed to follow an acidifying diet.

The results of the methenamine mandelate therapy were somewhat more encouraging. Of the 47 patients who could be followed, 23 (49 per cent) became free of A. aerogenes on repeated urinary culture.

It was necessary to continue the administration of the drug for a long while, five weeks in some cases, in order to inhibit growth of the organism in the urine. A. aerogenes did not develop resistance to methenamine mandelate even after such long periods of administration, which confirms the findings of Scudi and Duca.[5]

Aureomycin.—Early in 1949, aureomycin became available and was tried in an initial series of 23 unselected consecutive cases of persistent A. aerogenes infection of the urinary tract. Five hundred milligrams of aureomycin was administered four times daily for four days. The immediate clinical response was excellent in 21 of the 23 cases. Toxicity was minimal, the only symptom being slight nausea, with occasional vomiting or diarrhea. The administration of aluminum hydroxide gel tended to ameliorate the gastrointestinal disorders.

The results following the administration of aureomycin were often spectacular. Patients who had suffered from severe pyuria for a long time voided clear urine within twenty-four to forty-eight hours. In 1 of these cases, that of a diabetic patient with a neurologic condition affecting the bladder, the pyuria was cleared despite the constant presence of residual urine.

REPORT OF CASE

The patient, a 57 year old man with a mild case of diabetes, entered Beth Israel Hospital Aug. 13, 1948 with a history of severe dysuria, tenesmus and urgency. Prior to admission, the bladder had been greatly distended. Forty-two fluid ounces (1242 cc.) of purulent residual urine were evacuated, and the catheter was left indwelling. On August 19 the catheter was removed, and the patient was able to void. On the next day, however, the patient again suffered from acute retention of urine, accompanied by chill and fever. Suprapubic cystostomy was performed that same day. The postoperative course of the patient was uneventful, and he left the hospital with a cystostomy tube.

The patient reentered the hospital October 5, and two days later a transurethral resection of the neck of the bladder was performed. The postoperative course was smooth, and the suprapubic tube was removed on the fifth postoperative day. The patient was able to void well, and had a healed suprapubic wound when he left the hospital. However, the pyuria persisted and was accompanied by residual urine, varying between 3 and 12 fluid ounces (89 and 355 cc.). Repeated urine cultures during the hospital stay and after discharge showed persistent growth of A. aerogenes. The pyuria was in no way affected by the administration of penicillin, streptomycin, sulfadiazine or methenamine mandelate.

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[3] Owen, S. E., and Finch, E. P.: Bacteriological Study of Urine from Paraplegic Patients, J. Urol. **61:** 258, 1949.

[4] Carroll, G.; Allen, H. N., and Doubly, E. R.: Study of Bacillary Infections of the Urinary Tract, J. A. M. A. **135:** 683 (Nov. 15) 1947.

[5] Scudi, J. V., and Duca, C. J.: Some Antibacterial Properties of Mandelamine (Methenamine Mandelate), J. Urol. **61:** 459, 1949.

On Jan. 24, 1949 the urine was milky and purulent. Urine culture still exhibited the growth of A. aerogenes. Aureomycin was administered orally in doses of 500 mg. four times daily. On the following day, the urine was clear and microscopic examination revealed only a few white blood cells. The administration of aureomycin was continued in this dosage for thirteen days. The urine has remained clear to the present time (July 1949), and repeated cultures have not shown growth of any organisms.

RESULTS

The clinical response was excellent in 21 of the first 23 cases studied. The 2 patients whose urine cultures showed continued growth of A. aerogenes after a single course of aureomycin therapy were treated with repeated courses of this drug, and both were cured of the infection.

However, the longer the 21 patients who had been initially cleared of their A. aerogenes infection were followed, the more instances of recurrence were found. The infection due to A. aerogenes recurred in 15 patients (71 per cent). In 2 cases it reappeared after a free interval of about two months. Eight of the 15 patients with recurrences were again treated by administration of aureomycin and were once more cleared of their infection. These patients were, for the most part, treated with smaller doses, 50 mg. of the drug being administered four times daily until a total of twenty-five 50 mg. capsules had been taken.

Because of these encouraging results, the study was increased to include 27 additional cases. Similar results were obtained: the initial clinical response was good, but there were frequent bacteriologic recurrences, some of which cleared again after retreatment. In no case were any significant toxic symptoms observed, nor was resistance to aureomycin developed by A. aerogenes in any treated patient.

SUMMARY

The effect of various drugs (sulfathiazole, sodium mandelate, methenamine mandelate [mandelamine®] and aureomycin) in the treatment of persistent Aerobacter aerogenes infection of the urinary tract was compared.

Aureomycin proved most consistently efficacious. In a series of 50 cases, the immediate clinical response was excellent in 42 (84 per cent). However, there was a large incidence of recurrence (43 per cent), in some instances as late as two months after the administration of aureomycin was discontinued. Additional courses of aureomycin therapy, however, sterilized the urine in most of the recurrent cases.

Aerobacter aerogenes infection of the urinary tract is probably best treated by a single intensive course (500 mg. of aureomycin four times daily for four days) followed by an additional lesser course (50 mg. four times daily for four days). If recurrence takes place, aureomycin should be readministered until a cure is effected.

Experience with aureomycin suggests that its action is bacteriostatic, not bactericidal. No strains of A. aerogenes developed resistance to aureomycin, and no significant toxic symptoms were seen in this series of 50 patients.

40 East Eighty-Third Street.
150 East Seventy-Third Street.

A SIMPLIFIED CAFFEINE GASTRIC TEST MEAL FOR THE DIAGNOSIS OF PEPTIC ULCER

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A simplified caffeine gastric test meal[1] is reported at this time to fulfil the need for a practical test which may be used as a diagnostic procedure in evaluating the status of the patient with suspected peptic ulcer.

METHOD

Aspiration of Gastric Juice.—The patient reports to the office at 8 a. m. after having fasted a minimum of twelve hours. In addition, he has refrained from brushing his teeth or smoking and has avoided mental stress and emotional excitement.[2]

A Levine tube is passed gently through a nostril into the stomach, and the entire gastric content evacuated and measured; a 10 cc. sample is tested for free and total hydrochloric acid. Six minutes later, aspirations are again commenced and continued for 4 minutes. The amount of free and total hydrochloric acid which has accumulated during this 10 minute period approaches the basal secretory level and serves as a base line (fig. 1).

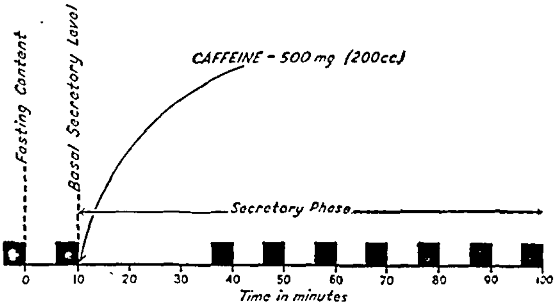

Fig. 1.—Schema illustrating method of fractional test meal. Aspirations are performed during periods (each of four minutes' duration) indicated by solid blocks.

At this time, 500 mg. (7½ grains) of caffeine sodium benzoate, in 200 cc. of distilled water at room temperature, is introduced slowly through the tube into the stomach. This solution is left in contact with the gastric mucosa for 30 minutes, at which time the entire gastric content is evacuated, measured, and a 10 cc. sample tested for free and total hydrochloric acid. Aspirations are then performed at 10 minute intervals for 60 more minutes, for 4 minutes during the latter part of each 10 minute period. Each sample is measured and titrated immediately. As a simplified office procedure, all the specimens secreted in response to the caffeine stimulus may be pooled, thoroughly mixed, their volume measured, and a single 10 cc. sample titrated for total acidity.

From the Departments of Medicine, Pathology and Pharmacology of the University of Oklahoma School of Medicine.

[1] (*a*) Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126:** 814 (Nov. 25) 1944. (*b*) Musick, V. H.; Avey, H. T.; Hopps, H. C., and Hellbaum, A. A.: Gastric Secretion in Duodenal Ulcer in Remission: Response to the Caffeine Test Meal, Gastroenterology **7:** 332, 1946.

[2] Wolf, S., and Wolff, H. G.: Evidence on the Genesis of Peptic Ulcer in Man, J. A. M. A. **120:** 670 (Oct. 31) 1942.

To completely evacuate the stomach, aspiration must be done with the patient in various positions; on the left and right sides, prone and supine, sitting, standing, bending from side to side, forward and backward and with moderate deep breathing. During these periods of aspiration, the tube is moved gently up and down. The patient must expectorate his secreted saliva,[3] and great care must be taken to prevent ballooning of the stomach with air or traumatizing the mucosa by overvigorous aspiration.[4]

Titrations.—Ten cubic centimeter samples of gastric juice are titrated with freshly prepared or stabilized $1/36$ normal sodium hydroxide (20 Gm. in 18 liters of distilled water), using standard Töpfer's reagent (p_{H} 3.5) and phenolphthalein (p_{H} 8.5) as indicators. The hydrochloric acid may be readily expressed in terms of milligrams of the acid, since 1 cc. of $1/36$ normal sodium hydroxide will neutralize 1 mg. of hydrochloric acid. The buret reading divided by 10 gives the amount of acid per cubic centimeter of gastric juice. This, multiplied by the total number of cubic centimeters in each specimen, gives the total amount of hydrochloric acid, expressed in milligrams (free and total) secreted during each test period. As Roth, Ivy and Atkinson have emphasized,[1a] the accuracy of a fractional test meal of this type is largely dependent on the ability of the technician to completely and gently empty the stomach.

RESULTS

Fractional gastric analyses were performed on 108 ambulatory patients selected from an office practice. These were consecutive patients receiving extensive laboratory and roentgen ray studies. In this group were 58 men and 50 women. Seventy-four of the patients had no evidence of peptic ulcer from the history, physical observations or roentgenographic examination. Twenty-two of the 108 patients gave a definite history of peptic ulcer and had positive roentgenographic evidence of duodenal ulcer. A third group, of 12 patients, presented a history of the pain–food relief syndrome and responded well to Sippy management, but these patients had no definite roentgenographic evidence of duodenal ulcer. However, some of them exhibited mild gastric retention and other suggestive symptoms, such as eccentric pyloric rings, spasm of the duodenal or prepyloric areas and deep contraction waves.

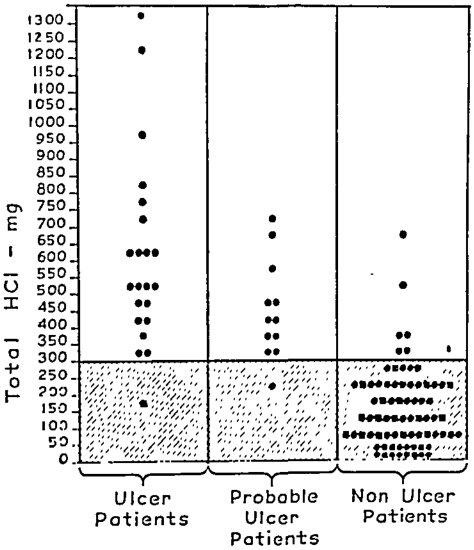

Fig. 2.—Scattergraph of total hydrochloric acid secreted by each of 108 patients during the ninety minute test period.

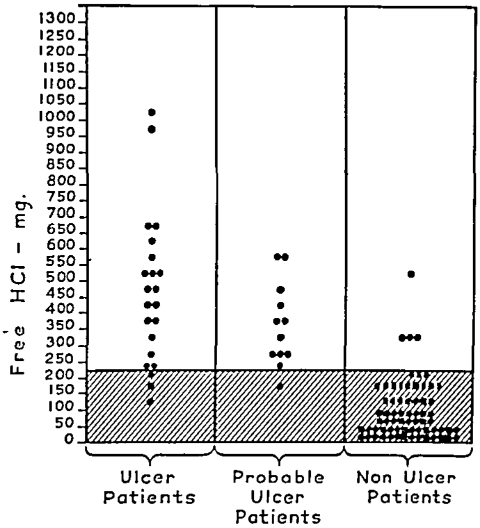

Fig. 3.—Scattergraph of free hydrochloric acid secreted by each of 108 patients during the ninety minute test period.

A scattergraph of the amount of total hydrochloric acid secreted by each of these 108 patients is presented in figure 2. It is apparent that only 6 of the control group of 74 persons secreted more than 300 mg. of total acid during the one and one-half hour secretory phase. In contrast to this, 32 of the 34 ulcer patients secreted more than 300 mg. of total acid.

Figure 3 represents a scattergraph of the amount of free acid secreted by these 108 patients. The level of free acid at which the ulcer group is most clearly separated from the nonulcer group is approximately 225 mg. of hydrochloric acid. The separation here is not quite as distinct as that shown in figure 2, based on total acid secreted.

COMMENT

The relationship of high acid values to peptic ulcer has been questioned by many investigators. This is probably due to the use of a low stimulatory type of test meal such as that described by Ewald. It is reasonable to assume that response to a potent secretagogue would more nearly reveal the true potentialities of the gastric secretory mechanism. Caffeine is a powerful secretagogue, the secretory reaction to which has been well standardized in both animals and man. It has advantages over histamine in that it is free from dangerous side reactions and is more easily administered. The p_{H} of caffeine solution does not significantly alter the gastric absorptive mechanism. It is clear and colorless and therefore permits easy and accurate titrations.

Another important deficiency of the conventional type test is that it fails to give any indication of the amount of hydrochloric acid secreted; only concentration of the acid is expressed in clinical units or milliequivalents. The test described here is superior in that it reveals concentration of acid and, in addition, the total amount of hydrochloric acid secreted (in milligrams) and the total volume of gastric juice aspirated during a standard of time.

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[3] Ihre, B.: Human Gastric Secretion, Acta med. Scandinav. (supp.) **95**: 1, 1938.

[4] Bezborodko, A., and Voronova, V. A.: A Comparative Evaluation of the Action of Mechanical and Chemical Stimuli on the Function of the Gastric Glands; cited by Babkin, B. P.: Secretory Mechanism of the Digestive Glands, New York, Paul B. Hoeber, Inc., 1944, p. 788.

As we have previously stated, it is probably the concentration (corrosive activity) of hydrochloric acid which is the major factor in producing or continuing the ulcerating process in peptic ulcer.[1b] As far as the histogenesis of peptic ulcer is concerned, it is probably the relation between mucosal resistance, mucous protection and concentration of acid which is most important. From the data presented here, it appears that the amount of hydrochloric acid that is secreted does play an important role in the causation of peptic ulcer. It certainly is of importance in the diagnosis.

The test which has been described represents a more practical and precise means of detecting the hypersecretion of hydrochloric acid which is commonly exhibited by the ulcer patient and which is characteristic of his disease.

SUMMARY

A simplified caffeine gastric fractional test meal is presented, which is suitable for office practice and which gives superior data in that it allows the determination of the total amount of hydrochloric acid that is secreted and the expression of the result in milligrams. The test is of diagnostic significance and is of particular value in the differentiation of ulcer patients from nonulcer patients.

Over 90 per cent of 34 ulcer patients secreted more than 300 mg. of hydrochloric acid during the ninety minute test period, whereas less than 10 per cent of 74 nonulcer patients secreted 300 mg. of hydrochloric acid during a similar period.

Clinical Notes, Suggestions and New Instruments

ARTERIOVENOUS ANEURYSM OF UTERINE ARTERY AND VEIN

ROLAND P. REYNOLDS, M.D.
CLARENCE I. OWEN, M.D.
and
MEYER O. CANTOR, M.D.
Detroit

The development of an arteriovenous aneurysm between the uterine artery and vein is extremely rare. In the 2 cases that have been previously reported, the emphasis appears to be rather on the extensive and large tortuous varices that result when the arterial blood is unnaturally shunted directly into the venous system than on the arteriovenous aneurysm. This is evident when it is noted that both case reports have as their titles, "Cirsoid Aneurysm of the Uterus." Dubreuil and Loubat [1] described the first case in 1926, and Graves and Smith [2] reported the second case in 1927. It is difficult to believe that other such cases have not been noted by gynecologists or surgeons, but a survey of the literature has failed to reveal them. It is possible that some case reports may be in the *Quarterly Cumulative Index Medicus* under titles that do not lend themselves well to a search for literature on this subject.

REPORT OF CASE

History.—E. P., a white woman aged 42, was admitted to the Grace Hospital on Feb. 14, 1949 complaining of headaches at her menstrual periods. She had first noted the onset of the headaches about four months earlier. The pain, which was severe, was generalized over her entire head and occurred with her menses. Her menses had always been regular and continued to be so. During the past four months she had complained of a progressively increasing tiredness in her right leg associated with a sensation of numbness in the calf. The sensation of numbness of the right calf was intermittent, being of one week's duration. In the intervals between such episodes of numbness her leg felt normal.

Past History.—The patient had diphtheria at 9 years of age, tonsillectomy and adenoidectomy in 1930, and an appendectomy in 1944. Headaches or vertigo had not occurred prior to the onset of the present illness. The eyeballs had been sore for the past six months; vision was excellent. Examination of ears, nose and throat revealed normal conditions. There had been albuminuria associated with ankle edema and an elevation of blood pressure following an acute infection of the upper part of the respiratory tract two years ago. This had cleared up in one week and had not recurred. Neuromuscular examination did not reveal numbness or tingling, anesthesia or paresthesia, ataxia or dyssynergia. Catamenia had begun at age 15 and had been regular, except for periods missed in May and June of 1948. The next period came in the early part of July. Then another period came six days later, at the end of July. Six weeks later, in mid-September, there was a normal period. They had then occurred normally every twenty-six days. The flow was moderate, and the periods were of four days' duration. The patient's husband and her 15 year old son were alive and well. She had had one miscarriage, in 1935. The balance of the history was noncontributory.

Physical Examination.—The patient lay in bed without apparent discomfort and did not appear to be acutely ill. The temperature was 98 F., the pulse rate 90 and the respiratory rate 20. The eyelids were erythematous, and the pupils were equal and regular and reacted to light and accommodation. There was no nystagmus or diplopia. The blood pressure was 102 systolic and 58 diastolic. A soft systolic murmur in the aortic area was transmitted to the neck and along the left sternal border to the apex. The abdomen was soft, without masses or spasm. Pelvic examination disclosed that the uterus was enlarged and soft. On palpation it felt like a pregnant uterus. The balance of the physical examination revealed essentially normal conditions. The reaction to the Friedman test for pregnancy was negative on two occasions, three weeks prior to admission and again after admission to the hospital. Results of urinalysis were normal.

Operation and Course.—On Feb. 3, 1949, a diagnostic dilatation and curettage was scheduled. With the patient under gas and ether anesthesia the cervix was examined. It was found to be rather soft. As soon as the Hegar dilator was inserted into the cervical canal to dilate it for curettage, a tremendous outpouring of bright red blood began. An attempt to curet the uterus had to be given up because of the severe uncontrollable hemorrhage. The uterus was tightly packed, and the patient was given alpha-hypophamine (pitocin®) intramuscularly. The abdomen was prepared for surgical intervention. A low midline incision was made, and a supracervical hysterectomy was performed rapidly. At the close of the operation the uterine area was carefully examined for bleeding. The area of surgery was dry at this time, although the blood pressure had dropped alarmingly. The vessels in both broad ligaments and on the uterus were tortuous and large. The abdomen was closed in layers. The patient had been given a blood transfusion at the beginning of, and during, the operation. Her blood pressure dropped postoperatively to 44 systolic and 30 diastolic and remained at this level despite the infusion of 1,000 cc. of whole blood and 1,500 cc. of dextrose and isotonic sodium chloride solution. At 2 p. m. her red blood cell count was 2,150,000 with 39 per cent hemoglobin. At 5 p. m. her condition was poor. Dulness was noted in the flanks. The pulse was rapid and weak. She was taken back to the operating

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From Grace Hospital.

1. Dubreuil, G., and Loubat, E.: Ann. d' anat. path **3**: 697-718, 1926.
2. Graves, W. P., and Smith, G. Van S.: Cirsoid Aneurysm of the Uterus, Am. J. Obst. & Gynec. **14**: 30-34, 1927.

room, and a transfusion of 3,000 cc. of whole blood was given. The abdominal incision was reopened and the peritoneal cavity was entered. When the abdomen was opened a large amount of blood was found, which was coming from a vessel in the left broad ligament. This was clamped and tied, and the abdomen was closed. The condition of the patient improved immediately after ligation of the bleeding vessel. The blood pressure was 90 systolic and 40 diastolic at the end of the operation, and the pulse was of good quality. The patient, who was almost moribund at the start of the operation, was now able to talk and seemed to be in fairly good condition.

After the second operation her convalescence was uneventful, and she was discharged March 6, 1949, her twelfth postoperative day.

Pathologic Report.—Gross: The total specimen was widely opened. The body of the uterus measured 6 by 6 by 5 cm. The serosal surface was smooth. The myometrium did not contain any tumor. Located in the myometrium were several cystic spaces which measured up to 4 by 4 by 5 mm. A portion of blood clot remained in a few of the cystic spaces. The endometrium was 2 mm. thick and it was smooth. The attached uppermost portion of cervix measured 3 by 2.5 by 2.5 cm.

Microscopic: The myometrium exhibited a considerable amount of fibrosis, which was present throughout all the sections made. There were also a number of large, heavy-walled blood vessels and many blood spaces. In addition, there was an area in which there were a large number of blood spaces of various sizes and contours, most of which had thick, hypertrophied, muscular walls. This observation is characteristic of an arteriovenous aneurysm, although it is impossible to demonstrate the connection between artery and vein. Some of the spaces in this area approximated the endometrium. The latter was thin and greatly exfoliated, exhibiting much hemorrhage. The cervical portion displayed extensive fibrosis, numerous large, heavy-walled blood vessels and numerous cystic glands. There was no malignancy.

Diagnosis: The diagnosis was cirsoid aneurysm of the myometrium, fibrosis of the myometrium, and fibrosis and cystic glands of the cervix.

Follow-Up.—The patient has remained in good health and no longer complains of pain in the head. The blood cell count at the time of her discharge from the hospital was 4,000,000 red blood cells, with 81 per cent hemoglobin.

COMMENT

The importance of this vascular pathologic development depends less on its rarity, when the vessels involved are uterine, than on the extreme seriousness to the patient. Of the 2 cases previously reported, death occurred postoperatively in 1 and hemiplegia developed on the seventh postoperative day in the other. Only the prompt intervention of the operating surgeon (R. P. R.) saved the life of the patient here reported on two occasions: first, when she began to hemorrhage as a result of instrumentation of the cervix and second, when one of the large, thick-walled vessels in the left broad ligament opened postoperatively. Reoperation five hours after hysterectomy definitely prevented a fatality.

In a comparison of the 3 cases, several features appear to be common to all. In every instance the uterus was soft and the vessels in the broad ligaments were decidedly dilated and tortuous. A soft uterus of this type could easily be diagnosed as indicative of an early stage of pregnancy. In the case of Graves and Smith, as in our case, dilatation of the cervix resulted in profuse hemorrhage. Enormously dilated vessels are the most prominent features in all 3 cases. The difficulty of controlling bleeding at the stump was also noted by Dubreuil and Loubat. Fibrosis of the uterus was a prominent feature in all the cases.

Graves and Smith's patient and Dubreuil and Loubat's patient were both 62 years of age. For this reason it was thought that the condition was acquired after menopause and was probably the result of arteriosclerosis. Our patient was only 42 years of age and had not passed through the menopause, but her uterus displayed a pronounced degree of fibrosis and the uterine vessels presented a decided thickening of the tunica media, as is seen in arteriosclerosis.

SUMMARY AND CONCLUSION

1. Cirsoid aneurysm of the myometrium is an extremely rare condition.

2. The uterus is usually soft, so that a diagnosis of pregnancy with retained secundines is not uncommon.

3. Dilatation of the cervix usually results in a profuse uncontrollable hemorrhage requiring hysterectomy.

4. Because of the extreme degree of tortuosity of vessels in the broad ligaments and uterus, and the decided thickening of their walls, the control of bleeding is difficult and secondary hemorrhage is apt to occur.

5. All cases of cirsoid aneurysm of the myometrium require hysterectomy if the diagnosis is suspected. Dilatation and curettage is definitely contraindicated.

6. Fibrosis of the uterus and pronounced sclerosis of the uterine vessels appears to be the most prominent microscopical feature of this condition.

856 Fisher Building.

Committee on Cosmetics

REPORT TO THE COMMITTEE

The Committee on Cosmetics has authorized publication of the following report. AUSTIN SMITH, M.D., *Secretary.*

HEALTH ASPECTS OF COMMON CHEMICALS USED IN HAIR-WAVING PREPARATIONS

A. J. LEHMAN, M.D.
Washington, D. C.

The use of chemicals for the production of curl in hair is of relatively recent origin. The first so-called permanent waves obtained by means of chemicals were produced with borax, water and heat. This process was developed shortly after the turn of the century. A significant advance in chemical processes for waving of hair was the discovery, shortly after World War I, that the use of ammonia with the borax could produce a more satisfactory curl and simultaneously reduce the "curling time." [1] Various chemicals have been explored for their adaptability to the production of curl in hair, with or without the application of heat. Heat may be applied in two ways, by some mechanical device, in the machine type of wave, or by the release of heat resulting from a chemical reaction, the machineless type. Solutions of ammonia or ammonium carbonate are the chemicals employed in this process, and injuries which may result are simple heat burns and will not be discussed here.

This paper is limited to the discussion of local and systemic effects which may result following exposure to chemicals used in the "cold" permanent waving of hair. Among these are the alkaline sulfites, alkaline solutions of ammonium hydrogen sulfide and, currently popular, the various salts of thioglycolic acid. Thioglycerol is also an efficient agent, but because of manufacturing difficulties its use has been limited. Large volume production is now possible, and thioglycerol may assume greater commercial importance.

Chief, Division of Pharmacology, Food and Drug Administration, Federal Security Agency.

[1] Suter, M. J.: J. Soc. Cos. Chem. 1:103 (March) 1948

REGULATION OF COSMETICS

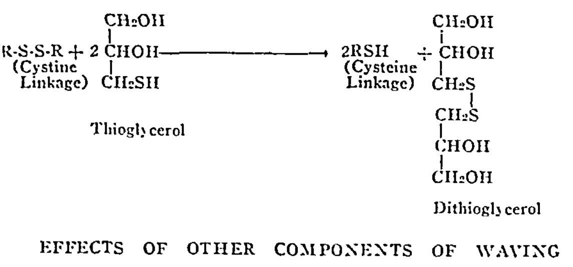
Undoubtedly the ingredients of cosmetics a few decades ago were largely of simple animal, vegetable and mineral origin, and injuries resulting from the use of such products were less serious than may be obtained with newer synthetic bases or solvents. Cosmetic preparations were not mentioned for regulation in the Food and Drugs Act of 1906. During the last few decades cosmetics have acquired general popularity. At the same time the advent of synthetic chemistry has introduced many new chemicals into the field, with the result that complaints of injury have increased to the point where regulations for the use of these newer materials are necessary. Regulatory measures to minimize the possibility of introducing harmful ingredients were legalized by Congress in the Federal Food, Drug and Cosmetic Act of 1938. The section of the Act which applies to the hair-waving preparations forbids the use of poisonous or deleterious substances which may be injurious when such preparations are used in the customary manner. A variety of pharmacologic data should be obtained by the manufacturer or producer before the product is marketed to permit an adequate appraisal of any possible hazard.

CHEMICAL ASPECTS OF COLD PERMANENT WAVING

The waving procedure involves chemical, physical and morphologic changes in the hair. The stratum corneum of the epidermis and the hair and nails are composed chiefly of fibrous proteins. Although these possess considerable refractoriness to chemical action, they are susceptible to the action of alkalies and to keratolytic activity. For this reason, the majority of the cold waving solutions are composed of a keratolytic agent with sufficient alkali, commonly ammonia, to adjust the waving solution to a p_H of 9.0–9.5.

During the waving procedure the hair is rendered plastic as the result of the alkaline reduction of the cystine and other linkages in the hair. The extent of the change produced is determined by the concentration of the active ingredients in the solution, total time of exposure, temperature and p_H.

The alkaline salts of thioglycolic acid dissolve hair or wool actively at p_H 11.0. At p_H 9.0–9.5, the range employed in the waving procedure, keratolysis still occurs but at a much slower rate. The reducing action of the thioglycolic acid or thioglycerol on the cystine linkage is not clearly understood but may be illustrated by the following chemical equations:



$$\underset{\text{(Cystine linkage)}}{\text{R-S-S-R}} + \underset{\text{Thioglycolic Acid}}{2\text{HSCH}_2\text{COOH}} \longrightarrow \underset{\text{(Cysteine Linkage)}}{2\text{RSH}} + \underset{\text{Dithioglycolic Acid}}{\begin{matrix}\text{SCH}_2\text{COOH}\\ | \\ \text{SCH}_2\text{COOH}\end{matrix}}$$

$$\underset{\text{(Cystine Linkage)}}{\text{R-S-S-R}} + 2\underset{\text{Thioglycerol}}{\begin{matrix}\text{CH}_2\text{OH}\\ | \\ \text{CHOH}\\ | \\ \text{CH}_2\text{SH}\end{matrix}} \longrightarrow \underset{\text{(Cysteine Linkage)}}{2\text{RSH}} + \underset{\text{Dithioglycerol}}{\begin{matrix}\text{CH}_2\text{OH}\\ | \\ \text{CHOH}\\ | \\ \text{CH}_2\text{S}\\ | \\ \text{CH}_2\text{S}\\ | \\ \text{CHOH}\\ | \\ \text{CH}_2\text{OH}\end{matrix}}$$

EFFECTS OF OTHER COMPONENTS OF WAVING SOLUTIONS

It is a common procedure to include a surface active agent in waving solutions. The addition of such agents produces a rapid and even distribution of the waving solution through the hair. Whereas these properties are desirable, such wetting agents also account for an undesirable tendency for a greater seepage of the solution through the hair and for an increased amount of the lotion to reach the scalp.

Gums and resins or so-called clouding agents are added to waving lotions for a number of purposes: (*a*) to increase the viscosity of the solutions, (*b*) to obtain better physical application to the hair and (*c*) to minimize the amount of solution reaching the scalp. Any procedure which decreases the amount of lotion reaching the scalp minimizes the likelihood of toxic reactions. However, certain synthetic gums or resins can be, and have been, responsible for the production of sensitizations in both patrons and operators. In the case of some waving lotions the incidence of sensitizations has been sufficiently common to preclude their use.

Perfumes and coloring agents are added to hair-waving solutions for esthetic effect. Since most cold hair-waving lotions contain a sulfur compound, they possess an offensive odor which requires a perfuming agent to mask it. Danger from the use of perfuming agents is slight, although these have occasionally produced sensitization.

The chemical reaction accounting for the "waving procedure" is arrested by the use of so-called neutralizers. These are weak oxidizing agents employed in a weakly acidic medium. Such agents as peroxides, perborates and bromates, and in some cases in a solution containing citric acid; are usually employed for this purpose. These weakly oxidizing, or mildly acidic, solutions have not caused adverse local or systemic effects.

PHARMACOLOGY

Alkaline ammonium hydrogen sulfide,[2] formerly used, and the alkaline solutions of mercaptans,[3] currently used in cold hair-waving solutions, are not inert physiologically. In experiments both classes of compounds produced local and systemic toxic effects when administered percutaneously by various technics.[4] Some of these experimental technics may seem rigorous, especially since it is often stated that a consumer may be exposed to the waving procedure only once every second or third month. The toxicity experiments [4] were purposely designed to be rigorous because the operator in the beauty shop is exposed daily to varying quantities of the solution. It thus becomes pertinent to observe the effect of daily exposures of laboratory animals to varying quantities of the waving lotion.

These experiments furnish data on the extent of cutaneous absorption of the waving ingredient, tissue storage (if any), excretion, organ function (liver and kidney) and blood and also furnish material for histologic studies of the tissues of treated animals. These studies, therefore, should establish the levels of administration at which damage will be first observed and supply the data necessary to establish a margin of safety in the use of a given waving preparation.

The waving lotion in the aforementioned tests was applied to the clipped intact skin of the experimental subject rather than to the hair as occurs in practice. However, the amount of solution which ultimately reaches the scalp during any waving procedure depends largely on the skill of the operator. From current injury reports, it is evident that in some cases waving lotion remained in contact with the scalp for a considerable period.

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[2] Laug, E. P., and Draize, J. H.: J. Pharmacol. & Exper. Therap. **76**:179 (Oct.) 1942. Bunce, A. H.; Parker, F. P., and Lewis, G. T.: Accidental Death from Absorption of Heatless Permanent Wave Solution, J. A. M. A. **116**: 1515 (April 5) 1941.

[3] Draize, J. H.; Alvarez, E., and Whitesell, M.: Proc. Scient. Sec. Toilet Goods A., no. 7, p. 29, May 16, 1947. Draize, J. H.; Alvarez, E., and Woodard, M.: Federation Proc. Soc., Pharm. & Exper. Therap. **8**: 287 (March) 1949.

[4] Draize, J. H.; Woodard, G., and Calvery, H. O.: J. Pharmacol. & Exper. Therap. **82**: 377 (Dec.) 1944.

The chemical nature of waving lotions, that is, their ability to alter hair and, consequently, the epidermis, accounts for their ability to produce primary irritations of the skin. A review of complaints of injury following the use of waving lotions reveals that approximately 80 per cent refer to a dermatitis not unlike that which may result from a simple chemical burn.

These injuries consist of erythema and edema of the skin of the scalp or face when the waving solution has been allowed to remain in contact through negligence of the operator or through a misunderstanding of the directions for use. Experimentally, injuries referable to the use of ammonia-borax or alkaline sulfite hair-waving preparations were predominantly a maceration or a keratolytic effect on the stratum corneum of the epidermis. Experimental evidence [2] on alkaline solutions of ammonium hydrogen sulfide indicates that such preparations are so extremely hazardous as to preclude their use in hair-waving agents. This has stimulated the search for less toxic substances, and as a result thioglycolic acid and thioglycerol have been introduced into the cosmetic field.

These mercaptans, now in current use in waving solutions, are readily absorbed by the skin of experimental animals. In the rigorous animal testing of the thioglycolate employing multiple dose applications (daily inunctions for a ninety day period), the adverse effects were acute and almost entirely limited to severe cutaneous reaction. The manner in which these tests were conducted represented quantities and number of applications greatly in excess of those which would obtain for the patron who is given a permanent wave three or four times yearly. Thioglycerol under similar conditions of testing produced an acute local cutaneous reaction, but this was less severe than that observed with the thioglycolate. Thioglycerol, however, caused a rather high incidence of sensitization and thyroid epithelial hyperplasia.

Recovery from acute poisoning in animals is rapid and is reflected in rapid improvement of the general appearance of the experimental animals on discontinuance of the treatment. The rapid decrease in total sulfur excretion, after treatment is interrupted, further reflects the observation that poisoning is an acute phenomenon.

CONTAMINANT AND OXIDATION PRODUCTS OF THIOGLYCOLIC WAVE LOTIONS

Since thioglycolic acid in the form of various salts is the active ingredient of 75 per cent or more of the cold waving lotions in current use, investigations following the usual technics have been made of the percutaneous toxicity of the common contaminants usually present in such waving lotions, namely, thiodiglycolic acid ($S[CH_2COOH]_2$) and the oxidation product of thioglycolic acid–dithioglycolic acid ($(SCH_2COOH)_2$. Both of these products tested under conditions and concentrations comparable to those in which the waving lotion used were found less toxic to the laboratory animal than was the thioglycolate.

HISTOLOGIC OBSERVATIONS

Histologic examination of tissues of animals poisoned with topically applied ammonium hydrogen sulfide revealed an acute necrotizing dermatitis. In cases of severe dermatitis there was sometimes complete necrosis of the epidermis, hair follicles and corium. The corium generally showed less damage than the epidermis. Animals dying two to four days after exposure showed numerous foci of recent coagulative necrosis of the liver and renal damage consisting of slight necrosis of the tubules and the presence of moderate amounts of protein material in the tubular lumens. The animals on which thioglycolate was used that did not exhibit the severe acute poisoning had mild dermatitis and minor visceral changes. In acute fatal thioglycolate poisoning, the animals exhibited severe dermatitis, subcutaneous hemorrhages and visceral changes in parenchymatous organs not unlike those observed in conditions of severe inanition.

The animals on which thioglycerol was used exhibited no severe cutaneous lesions or significant visceral organ changes. There was, however, hyperplasia of the thyroid gland. The significance of this hyperplasia has not as yet been adequately explored.

HEMATOLOGIC OBSERVATIONS

Repeated examinations of the blood of the animals in the subacute toxicity experiments failed to reveal any abnormalities in the subjects treated with thioglycerol. Animals treated with the thioglycolate solutions exhibited some fluctuation in hemoglobin levels and in volume of packed red cells. These fluctuations were within normal limits.

SUMMARY AND CONCLUSIONS

The mercaptans in current use as hair-waving preparations are capable of producing local and systemic toxic effects. It has been demonstrated experimentally that in thioglycolate-treated animals the adverse effects are due primarily to the thioglycolate ion and not to the contaminant (thio-ether) or its oxidation product (thiodiglycolate ion).

The poisoning is an acute phenomenon and recovery is rapid.

Thioglycerol produces thyroid hyperplasia in experimental animals. A high incidence of sensitization has also been obtained with this material in experimental animals. These observations should be carefully appraised.

The number of cold waves given each year employing salts of thioglycolic acid can no doubt be estimated in the millions. The number of complaints in comparison with the total number of applications is small. From rigorous laboratory evaluation of the hazards involved, it may be stated that the judicious use of ammonium thioglycolate as a hair-waving preparation should prove a relatively innocuous procedure. The majority of complaints from patrons and operators are probably due to the misuse of the product because of failure to heed directions or precautions. Allergic responses to the thioglycolates appear to have occurred only rarely.

Allowance must also be made for allergic responses to the other ingredients, such as wetting agents and perfumes.

It is believed that protection for the hands is essential in the case of operators or persons who have occasion to be exposed daily to varying amounts of the waving solution.

Council on Physical Medicine and Rehabilitation

REPORTS OF THE COUNCIL

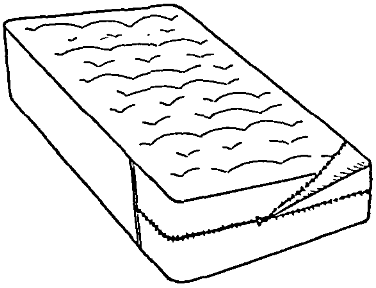
The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.

HOWARD A. CARTER, *Secretary.*

PROTECTO-DUST ENCASINGS ACCEPTABLE

Manufacturer: Allergy Free Products, 224 Livingston Street, Brooklyn 2.

The Protecto-Dust Encasings are coverings for mattresses, box springs and pillows designed to protect users who are allergic to dusts associated with these articles. The essential material is a fabric called fairprene.® The Protecto-Dust Encasings are made to fit the individual order; the patient merely sends the exact measurements.



Protecto-Dust Encasing

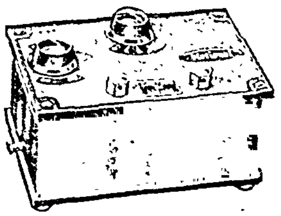
The manufacturer claims that this material is odorless and washable, withstands sterilization by boiling and with ordinary care gives years of service. These claims were verified by evidence obtained by the Council from acceptable sources.

The Council on Physical Medicine and Rehabilitation voted to include the Protecto-Dust Encasings in its list of accepted devices.

NATIONAL LIGHT DUTY CAUTERY SET ACCEPTABLE

Manufacturer: National Electric Instrument Co., Inc., 92-21 Corona Avenue, Elmhurst, Long Island, N. Y.

The National Light Duty Cautery Set is designed for eye, nose, throat and dental use. It includes one cautery transformer, one pencil type cautery tip (electrode) holder and three sets of cautery tips. The cautery transformer operates on 110 volts of 50 to 60 cycle alternating current. It controls the heat of the pencil cautery electrodes and is stated to be capable of operating National cautery tips up to 20 amperes; the tips furnished with the set were stated to draw less than 20 amperes.



National Light Duty Cautery Set

The cautery pencil furnished with each set has a nonconductive insulating casing machined from a cast resin. Two platinum wire tips are components of the eye cautery set; two similar platinum tips are components of the nose and throat set, and a third pair are components of the dental set. The over-all dimensions of the apparatus are 8 by 9 by 14 cm. (3¼ by 3½ by 5⅜ inches). It weighs 1.5 Kg. (3 pounds, 6 ounces). The weight for domestic shipment is 1.7 Kg. (3 pounds, 14 ounces) and for foreign shipment 2 Kg. (4 pounds, 6 ounces).

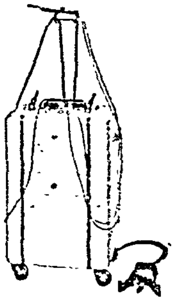
The apparatus was given a thorough trial under conditions acceptable to the Council and was found to be satisfactory in construction and performance. The Council on Physical Medicine and Rehabilitation voted to include the National Light Duty Cautery Set in its list of accepted devices.

BOVIE ELECTROSURGICAL UNIT, MODEL O-3, ACCEPTABLE

Manufacturer: The Liebel-Flarsheim Company, 303 West Third Street, Cincinnati 2.

The Bovie Electrosurgical Unit, Model O-3 (Office Bovie), is a new design based on a previously accepted 3-Gap Model Portable Bovie Electrosurgical Unit. The new feature is a special circuit for high frequency epilation in addition to the original arrangements for cutting, coagulation, desiccation and fulguration.

For operation, the apparatus requires 115 volts of alternating current and draws 11 amperes. Accessories include a foot switch, a stainless steel indifferent plate, two chuck handles and a standard set of electrodes. The dimensions are 67 by 48 by 33 cm. (26½ by 19 by 13 inches) and the weight is 45 Kg. (100 pounds). The weights for domestic and foreign shipment are 60 Kg. (130 pounds) and 91 Kg. (200 pounds), respectively.



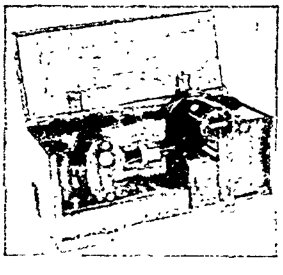
Bovie Electrosurgical Unit, Model O-3

The apparatus was given a thorough clinical trial under conditions acceptable to the Council. On the basis of this and other evidence of satisfactory construction and performance, the Council on Physical Medicine and Rehabilitation voted to include the Bovie Electrosurgical Unit, Model O-3, in its list of accepted devices.

CAMBRIDGE SIMPLI-TROL MODEL PORTABLE ELECTROCARDIOGRAPH ACCEPTABLE

Manufacturer: Cambridge Instrument Co., Inc., Grand Central Terminal, New York 17.

The Cambridge Simpli-Trol Model Portable Electrocardiograph is a portable string-galvanometer type of instrument equipped for photographic recording. It is housed in a mahogany case measuring 25 by 20 by 48 cm. (10 by 8 by 19 inches) and weighs 14 Kg. (30 pounds). The weight for domestic shipment is 18 Kg. (40 pounds) and for foreign, 43 Kg. (94 pounds). Accessories include 4 direct-contact electrodes, 1 exploring chest electrode, 1 roll Camco no. 30 photographic paper and 1 tube of Cambridge electrode jelly. It operates on 110 volt alternating current and draws 60 watts.



Cambridge Simpli-Trol Model Portable Electrocardiograph

The instrument was tested in a physical and a clinical laboratory acceptable to the Council, and convincing evidence was obtained that the published requirements of the Council for acceptance of electrocardiographs were satisfied. The Council on Physical Medicine and Rehabilitation voted to include the Cambridge Simpli-Trol Model Portable Electrocardiograph in its list of accepted devices.

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SATURDAY, NOVEMBER 19, 1949

DISSEMINATED LUPUS ERYTHEMATOSUS

Disseminated lupus erythematosus is a prolonged febrile disease of the body which, in the absence of cutaneous manifestations, may superficially resemble rheumatic fever and rheumatoid arthritis. In the absence of cutaneous manifestations diagnosis may be extremely difficult. Features such as lymphadenopathy, retinal alterations in the form of rather typical perivascular hemorrhages or fluffy exudates, leukopenia and a false positive Wassermann serum reaction may be present during an exacerbation of disseminated lupus erythematosus and may aid in differentation from rheumatic fever.

The erythema on the bridge of the nose and cheeks and other areas of the skin exposed to sunlight and wind is not the primary manifestation of lupus erythematosus, and these lesions are not responsible for the alterations in the viscera. Osler, among others, emphasized that the alterations occurring in the skin of patients with disseminated lupus erythematosus had their counterparts in the internal organs. The cutaneous lesions may be absent throughout the entire course of the disease or may appear only during acute exacerbations or in the terminal stage.

The clinical picture is indeed complex. In the active stage there is constant fever and there may be arthralgias, weakness, weight loss, fatigue, characteristic erythematous eruptions, ulcerative lesions of the mucous membrane of the mouth and local or generalized lymphadenopathy. There may be clinical evidence of pneumonia, and albumin and red cells may appear in the urine. Pericarditis and verrucous endocarditis are frequent. Libman-Sacks' cases of atypical verrucous nonbacterial endocarditis are essentially cases of lupus erythematosus. The liver may be enlarged and the spleen palpable. Tumulty and Harvey[1] emphasize the importance of nervous system manifestations. In their series of 32 patients, 4 had convulsive episodes, 4 presented a toxic psychosis, 3 patients had transient periods of coma, 3 had hemiplegia, 2 patients had transient episodes of bilateral ptosis and 1 had attacks of jacksonian epilepsy. Baehr and Pollack[2] stress the predominant occurrence of lupus erythematosus in young women, which in their studies amounted to 95 per cent. The disease runs its course even to death after a variable period, which may be weeks, months or years. Complete or partial remissions may last months to years.

Klemperer, Pollack and Baehr[3] noted in their histologic studies of 12 patients with disseminated lupus erythematosus a widespread alteration in the connective tissue affecting the heart, serous membranes, blood vessels, lymph nodes, skin and mediastinal and retroperitoneal areas. The most impressive change observed in the kidneys was a peculiar alteration of the glomerular loops characterized as "wireloop" because of resemblance to loops of bent wire. The widespread, frequent and characteristic alterations of collagen, together with specific predilection of the injury for the collagen in certain sites, such as the heart, glomeruli, blood vessels, skin, spleen and retroperitoneal tissues, have not been encountered in any other disease except diffuse scleroderma. The morbid process becomes manifest in a focal fibrinoid metamorphosis of the collagenous fibers, resulting occasionally in fragmentation of these elements and in swelling and increased density of the interfibrillar homogeneous ground substance. Klemperer[4] concluded that acute lupus erythematosus may be defined anatomically as a disease characterized by a fundamental alteration of the collagenous portion of the connective tissue. The exact nature of the alteration, he feels, must be determined by methods of histology, biochemistry and biophysics.

Montgomery and McCreight[5] question the collagenous theory advanced by the Mount Sinai group (Klemperer, Pollack and Baehr). They found in the biopsies of 96 cutaneous lesions of disseminated lupus erythematosus, using various connective tissue strains, alterations of collagen, including fibrinoid change in the walls of the vessels in the skin and the connective tissue of the skin, in less than one fourth of their cases of chronic, subacute and acute disseminated lupus erythematosus. In most instances in which fibrinoid degeneration could be demonstrated, it was minimal and no greater than that seen in many other chronic inflammatory infectious diseases of the skin.

The course of the disease is not known. Recent investigators reject the concept of tuberculous origin of the disease. Montgomery and McCreight were able to demonstrate the lupus erythematosus cells described by Hargraves in sternal aspirations in 5 of 7 cases of acute disseminated lupus erythematosus and 3 of 18 cases of subacute disseminated lupus erythematosus. These cells have not thus far been observed in any other condition, except in 1 case of myeloma. They may provide an important diagnostic feature of the disease.

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[1] Tumulty, P. A., and Harvey, A. M.: The Clinical Course of Disseminated Lupus Erythematosus: An Evaluation of Osler's Contributions, Bull. Johns Hopkins Hosp. **85**: 47 (July) 1949.

[2] Baehr, G., and Pollack, A. D.: Disseminated Lupus Erythematosus and Diffuse Scleroderma, J. A. M. A. **134**: 1169 (Aug. 2) 1947.

[3] Klemperer, P.; Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus, Arch. Path. **32**: 569 (Oct.) 1941.

[4] Klemperer, P.: The Pathogenesis of Lupus Erythematosus and Allied Conditions, Ann. Int. Med. **28**: 1 (Jan.) 1948.

[5] Montgomery, H., and McCreight, W. G.: Disseminated Lupus Erythematosus, Arch. Dermat. & Syph. **60**: 356 (Sept.) 1949.

The collagenous theory of Klemperer does not explain the pathogenesis of the disease but it does offer an anatomic substratum for the concept. To gain further information concerning the disease, Klemperer suggests that the structural alteration of the connective tissue, described by him, should be studied in terms of reactions to well defined chemical and physical influences. A study of this type has recently been reported by Altshuler and Angevine.[6] These authors studied pathologic tissue from patients with lupus erythematosus and rheumatic fever by various stains and were able to show that the common feature of fibrinoid formation of the connective tissue is the precipitation of the acid mucopolysaccharides of the ground substance. Such studies provide the information that is necessary to lead to complete understanding of the course of this disease. Perhaps it is not too much to hope that even a curative treatment may be developed soon.

FEE SCHEDULES AND THE SHERMAN ANTITRUST ACT

Price fixing, as it relates to commodities and articles of trade, has been declared by the United States Supreme Court to be an unreasonable restraint of trade and illegal within the meaning of the Sherman Antitrust Act. In a recent case decided by the district court for the District of Columbia the government contended for the first time that the adoption of fee schedules applicable to the delivery of personal services is likewise proscribed by the federal law. The Washington Real Estate Board had for many years, as had other associations of brokers, prescribed rates of commissions for brokers' services, and prior to this case the government had never contended that such activity violated the Sherman Antitrust Act. The Washington Board and its individual members, however, were alleged to have "combined to fix real estate brokerage commissions" in an unlawful manner. The National Association of Real Estate Boards was also named a defendant in the case for having allegedly "encouraged" and "incited" the local organization to act as it did. This was not a clandestine or surreptitious activity of the Washington Board, and the rates were generally adhered to by members and nonmembers in the Washington area. In denying the government's request for an injunction, the trial judge said:

> A real estate board may in a sense be likened to a labor union of real estate brokers. Admittedly there is no case in the Federal courts that has applied to personal services the rule that the fixing of prices of commodities or articles is *per se* an unreasonable restraint of trade. To contract for one's personal services is a fundamental right of every man. For men to combine to regulate the compensation to be charged by them for their own services is also entirely legal. While this right has been generally recognized in respect to persons who toil for wages or salaries, no reason appears discernible why it is not equally applicable in principle to those persons who work for commissions. The instant case appears to be the first occasion in the history of the enforcement of the Sherman Act that the Government has challenged this right.

As a matter of fact, the result of the stabilization of charges and the consequent uniformity has generally been considered as being in the public interest, although the court conceded that a different problem might be presented if the rates fixed were shown to be unreasonable.

The similarity between the fixing of brokers' commissions by brokers' organizations and acceptance of fee schedules by medical societies and bar associations is, of course, readily apparent. Government itself has encouraged, and even required, the adoption of physicians' fee schedules. Examples of this activity at the federal level are the Veterans Administration medical care program and some of the activities of the Children's Bureau. At the state level workmen's compensation laws have necessitated the fixing of fees for medical services. At the local level fee schedules applicable to welfare patients are not uncommon.

If the court had upheld the government's contention that the adoption of fee schedules is contrary to the Sherman Antitrust Act, the government itself could be shown to be one of the worst offenders. Fortunately, the decision of the court has thwarted another unreasonable attempt by government to extend its control over private enterprise.

ALLERGY TO REFINED FOOD PRODUCTS

Food allergy recently has received considerable attention in the medical and lay press. There are clearly defined instances where ingestion of a particular food provokes an unmistakable allergic response in certain persons; such reactions usually are recognized without difficulty. On the other hand, atypical signs, such as unexplained headache, fatigue, muscle pains, depressed spirits and slight changes in the leukopenic index, sometimes have been regarded as allergic responses to some constituent of the diet. While such symptoms are not generally considered to constitute a reliable basis for a diagnosis of allergy, nevertheless some have been interpreted as such and, as a result, the idea has been advanced that cereals, notably wheat and corn, are major causes of food allergy. In fact, not only has the crude, protein-containing flour been implicated but its refined products as well.

Corn starch and corn sugar have been pointed out as particularly menacing because of their inclusion in a wide variety of unsuspected articles, such as milk cartons, frozen food containers and excipients. It has been stated that corn syrups and dextrose may sensitize the bottle-fed infant. As a result of such suspicions, the avoidance of oils, sugars and starches by those occasional patients who are allergic to the unrefined sources of these foods has been advocated. However, the criteria on which the warnings are based have not been generally accepted. The customary cutaneous tests are not entirely reliable for the diagnosis of food allergy. Development of such subjective symptoms as headache, chilliness and fatigue after the feeding of a frankly suspected test meal are not sufficient to convince the average physician that a state of allergy exists. Any new regimen, including the elimination of suspected foods from the diet, may bring temporary relief, and a minimal diagnostic requirement should be reproduction in the patient of his symptoms on more than one occasion when the suspected food is included in a test meal unknown to the patient. He also should be given control meals lacking the food under suspicion.

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[6] Altshuler, C. H., and Angevine, D. M.: Histochemical Studies on the Pathogenesis of Fibrinoid, Am. J. Path. 25: 1061 (Sept.) 1949.

The antigenicity of sugars, starches and oils has not been established in the laboratory animal; anaphylactic antibodies have not been provoked by their deliberate administration. Dextrose has been given to man, even by the intravenous route, without any known incidence of anaphylaxis. It would seem advisable, then, for physicians to wait for an incontrovertible scientific evaluation before they regard refined food products as a dangerous threat to the patient with allergy.

Current Comment

A HYPOTHESIS OF THE PRODUCTION OF DENTAL CARIES

It is assumed that lactic acid results from reaction between lactobacilli in the mouth and carbohydrate material packed in the grooves in the biting surfaces of the teeth. The acid thus produced attacks the enamel and causes caries. Pincus[1] points out that the grooves of molar teeth are shallow cusps on the biting surface with extension far into the tooth. Such extensions are narrow and deep. The protein filling the groove may remain undisturbed, but the groove protein, the enamel protein and the dentine protein all contain combined sulfuric acid. Many bacteria, including strains of gram-negative bacilli in the carious material, can form from sulfatase, an enzyme which acts on a polysaccharide in these proteins releasing sulfuric acid. As yet the enzyme has not been shown to attack the dentine or enamel proteins but has been shown to attack a polysaccharide from these substances. When this acid is freed, equilibrium is maintained by the release of calcium salts (particularly calcium phosphate) in sound tooth structure, resulting in calcium sulfate. This might be expected to leave a friable enamel and soft dentine, the enamel being the more seriously affected because of its higher inorganic content. Although the production of lactic acid is not denied, there is insufficient proof that a degree of acidity sufficient to produce caries is ever maintained in the mouth cavity. In fact, caries does not develop in the superficial part of the groove as would be necessary in the carbohydrate placque but rather makes its first appearance at the bottom. Calcium sulfate has been identified in carious material. The conditions at the bottom of the groove would be favorable for the multiplication of bacilli and the action of the sulfatase and other necessary enzymes.

CATALOG OF CULTURES

The fifth edition of the "Catalogue of Cultures" has just been released by the American Type Culture Collection; the previous edition was published in 1938. The list of micro-organisms has changed appreciably in the eleven year interval through the addition of new species and strains and the loss or discard of others. Of the 2,975 strains designated in the current edition 49 per cent are bacteria, 28 per cent are fungi, 16 per cent are yeasts and the remainder are intermediate forms, algae, protozoa and bacteriophages. Viral and rickettsial agents will be available for distribution in the near future. Strains included in the catalog are available in the lyophilized state or as test tube cultures. Distribution is limited to recognized laboratories staffed by trained microbiologists. The American Type Culture Collection was founded to perform an essential service to microbiology. It has been supported since its beginning by sale of cultures and by gifts. The collection was formerly maintained at Georgetown University School of Medicine but was established in 1947 at 2029 M Street, N.W., Washington, D. C. To make the collection self supporting, the price of cultures, beginning Jan. 1, 1950, will be $10 each with a discount of 70 per cent to educational and charitable institutions and to organizations and individuals whose activities primarily concern the public welfare.

POSTPARTUM HEMOSTASIS

In studies of coagulation mechanisms in pregnancy, Weiner[1] and his associates of Harvard University aspirated amniotic fluid from intact membranes of women in labor. They found that 0.1 cc. of amniotic fluid would shorten, by at least half, the normal coagulation time of 2 cc. of freshly drawn venous blood. Blood samples, the normal coagulation time of which was 8 minutes, would form firm clots in 2.6 to 3.6 minutes. When blood from patients with hemophilia was used, the prolonged clotting time of 54 minutes was shortened to 3.8 minutes by the addition of one-twentieth volume of amniotic fluid. The activity of amniotic fluid is preserved for several days by storage at —10 C. The fluid is not inactivated by heating to 60 C. for 30 minutes, but is inactivated by boiling for 5 minutes. It is also inactivated by the addition of a small amount of heparin. The active principle is nondialyzable and has properties similar to those of thromboplastin. Weiner suggests the initiation of clotting of shed intrauterine blood as one of the probable functions of amniotic fluid. It would thus play an important role in postpartum hemostasis.

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[1] Pincus, P.: The Production of Dental Caries, Brit. M. J. **2:** 358 (Aug. 13) 1949.

[1] Weiner, A. E.; Reid, D. E., and Roby, C. C.: Science **110:** 190 (Aug. 19) 1949.

ORGANIZATION SECTION

Official Notes

APPOINT DIRECTOR OF COMMISSION ON CHRONIC ILLNESS

Dr. Morton L. Levin, Albany, N. Y., assistant commissioner for medical services of the New York State Department of Health, has been appointed director of the Commission on Chronic Illness. Dr. Levin has been granted leave of absence from his present post. Announcement of the appointment, effective Jan. 1, 1950, was made by Leonard W. Mayo of New York, chairman of the commission, the office of which will be located at the headquarters of the American Medical Association in Chicago. The commission originated under the sponsorship of the American Medical Association, the American Hospital Association, the American Public Health Association and the American Public Welfare Association. Its members include representatives of industry, labor, agriculture, education and other public interest groups, as well as those of the four sponsoring organizations.

In announcing the appointment, Mr. Mayo pointed out that Dr. Levin's training and experience in public health research and administration and in the special field of chronic illness particularly qualify him for directing the commission's work. He is a graduate of the University of Maryland School of Medicine and Johns Hopkins University and was instructor in epidemiology at the latter institution in 1934-1935. He also has served as medical director of the New York State Health Preparedness Commission and is associate research director of the New York State Cancer Commission.

The Commission on Chronic Illness was created in May 1949, to stimulate the formation of a well rounded program for the prevention and control of chronic disease and for the care and rehabilitation of the chronically ill.

The commission is engaged in assembling existing data in order to evaluate information now available and determine areas requiring further study. Its program also includes:

1. Encouraging universities and all other institutions responsible for research and for professional and technical training for the health services to emphasize the preventive aspects and the broad socioeconomic responsibilities medical science must assume in preventing chronic and disabling illnesses to the greatest extent possible and in rehabilitating its victims through humane and continuing treatment.

2. Promoting educational programs for the general public to increase understanding of chronic illness so that people may avoid predisposing conditions, recognize symptoms in early and curable stages and participate more hopefully, intelligently and effectively in the management of their own illness and in the care of chronically ill persons in their own families.

3. Stimulating development of new methods in organization and administration of services to the chronically ill.

4. Developing suggested patterns for integrated community programs.

5. Establishing criteria for appraisal of state and local chronic disease programs and facilities.

6. Suggesting priorities for determination of immediate as against long range needs as guides to state and local communities.

7. Exploring methods of giving effect to recommendations to be made by the commission.

8. Preparing a report to the American people outlining a comprehensive plan for prevention and control of chronic disease and for care and rehabilitation of the chronically ill.

Washington Letter

(From a Special Correspondent)

Nov. 14, 1949.

New Child Health Study Launched

A technical committee on fact finding, whose membership includes several physicians, met in Washington November 7 to complete plans for a nationwide study of factors contributing to development of healthy personalities in children. The investigation is preliminary to the Midcentury White House Conference on Children and Youth which will be held here in 1950. Members of the technical committee include Drs. Leo H. Bartemeier, Leroy E. Burney, Jules V. Coleman, T. Duckett Jones, David M. Levy, Walter B. Martin and Benjamin Spock. Drs. Jones and Spock are members of the national committee for the conference.

Military Medical Officers Converge in Capital

During the week of November 7 Washington was a converging point for virtually all high ranking medical officers of Army, Navy and Air Force, as well as hundreds of other members of the military medical departments. On November 7 and 8, hospital commanders and other key officers of the three services held separate conferences with their respective surgeons general. On November 9 a joint conference was held at the Naval Medical Center in suburban Bethesda, Md., with Dr. Richard L. Meiling, director of medical services in the Department of Defense, participating in the discussion of common problems. The remainder of the week was devoted to sessions of the Association of Military Surgeons.

Cancer Grants Approved

Approval of an additional $1,100,000 in federal grants in aid for cancer control and teaching was announced November 9 by the Federal Security Agency, after approval by Dr. Leonard A. Scheele, Surgeon General. A total of $634,971 will be distributed among 26 medical and 11 dental schools. Twenty-two projects concerned with case finding are recipients of $437,203 in cancer control assistance, of which 10 are new grants and 12 are renewals. All but two of the education grants are for continuation of existing projects. Seventy-five of the country's medical schools and 37 dental schools have now received, or will receive, this type of financial assistance under provisions of the National Cancer Act.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Defillo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov.29-Dec. 2. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

HIGHER PAY APPROVED FOR ARMY PHYSICIANS

The recently passed Career Compensation Act of 1949 raises the income of medical officers. Major General R. W. Bliss, the Surgeon General, points out that a physician who has completed his internship may be commissioned as a first lieutenant, either in the Regular Army or in the Medical Corps Reserve, and now receive total pay and emoluments amounting to $473.88 a month (if married or with dependents) or $458.88 a month (if single and without dependents). These figures compare with former pay totals of $417 and $361, respectively.

*New Pay Scale**

Monthly Pay and Allowances—Medical and Dental Corps Officers

	Years for Pay Purposes					
	Under 2	Over 2	Over 4	Over 6	Over 8	Over 10
Colonel..............	832.00	at 16 yr. add $14.25; at 18 yr. add $28.50; thereafter $28.50 each 4 yr.				
Lieutenant Colonel..	718.00	at 12, 14 and 16 yr. add $14.25; at 18, 22, 26 yr. add $28.50				
Major................	631.75	631.75	631.75	631.75	646.00	660.25
		Plus $14.25 increase each 2 yr. through 18				
Captain..............	545.50	545.50	559.75	574.00	588.25	602.50
		Plus $14.25 increase each 2 yr. through 18				
First Lieutenant.....	473.38	488.13	502.38	516.63	530.88	545.13
		Plus $14.25 increase each 2 yr. through 14				

* Years credited for pay purposes are total of all commissioned and enlisted service, active or inactive. Pay of single officers $15 (first lieutenants and captains); $22.50 (majors); $30 (lieutenant colonels), less than above amounts for officers with dependents. Interns $100 less than amounts shown. For Veterans Corps, Medical Service Corps, Army Nurses Corps, *and Women's Medical Service Corps deduct $100 for* determination monthly pay. At 18 years increase majors $28.50; at 22 years increase captains and majors $14.25; at 26 years increase majors $14.25. Effective date of this pay scale, Oct. 1, 1949.

A physician who has acquired sufficient professional experience and who can meet the other requirements may be commissioned directly as a captain or higher. A captain's pay, with emoluments, in the Medical Corps, is now $546 (with dependents) or $531 (without dependents), as against $462 and $426, respectively. On completion of four years of service, a captain receives regular increases at two year intervals.

Comparable increases have been made in the higher grades, thus making the financial rewards of military service commensurate with those of private practice. The new pay scale for postintern physicians, in all grades from colonel to first lieutenant, including quarters and subsistence allowances and the increases accruing from longevity of service, is shown in the table.

MEDICAL FOLLOW-UP SYSTEM

A patient follow-up system, designed to improve doctor-patient relationship in the Army has been announced by the Surgeon General. The system provides a medical follow-up card on which doctors may receive information concerning the care and disposition of patients with whom they have lost official connection. The card, self addressed on the reverse side, is filled out by the medical officer who wants the information and then accompanies the patient's records to his next hospital. Space is provided for a report on the diagnosis and condition on arrival, subsequent therapy and progress and probable or final disposition. There is also space for the "remarks or recommendations" of the medical officer under whose care the patient has come. The card may also be used by transferred medical officers who want to know the disposition of patients remaining. The card will serve a special purpose for doctors at overseas medical installations. Follow-up information on a patient who is evacuated to the United States for extended or highly specialized care may now be returned to the younger doctor who wants to know the accuracy of his diagnosis and the effectiveness of the treatment he prescribed.

CONSULTANTS WANT NEW LIBRARY BUILDING

A resolution asking for construction of a new building for the Army Medical Library highlighted the Sixth Annual Meeting of the Association of Honorary Consultants to the Army Medical Library in Washington, October 21. The resolution urged the general services administrator "to draft necessary authorization and to initiate further planning for a new building for the Army Medical Library with all dispatch consistent with the urgency of the need."

Dr. Raymond B. Allen, president of the University of Washington and until recently director of Medical Services, Office of the Secretary of Defense, replaced Dr. George F. Lull on the Executive Committee, which is comprised of four members who serve four year terms on a rotating basis. Major Gen. R. W. Bliss, the Surgeon General, addressed the morning session at the Army Medical Library. Dr. Detlev W. Bronk, president, Johns Hopkins University, was the speaker at the evening session at the Officers' Club, Army Medical Center. His subject was "The Results of Research."

Three former surgeons general of the Army, all retired, were present. They were Major Gen. Robert U. Patterson, Charles R. Reynolds and James C. Magee.

NAVY

ACTIVE DUTY FOR RESERVE OFFICERS

The following officers have been nominated for active duty in the Medical Corps Reserve:

Comdr. Howard L. Bergo of Detroit.
Comdr. Samuel S. Shouse, of Appomattox, Virginia, to the Air Force School of Aviation Medicine, Air University, Randolph Field, Texas.
Lieut. Comdr. Lewis D. Williams, Plymouth, Pennsylvania, to the Naval Auxiliary Air Station, Whiting Field, Milton, Fla.
Lieut. (jg) Eugene E. Bleck, Waukegan, Ill., to the Naval Hospital, Vallejo, Calif.
Lieut. (jg) George J. Shimkus, Naperville, *Ill.*, to *the Naval Hospital*, Portsmouth, Va.
Lieut. (jg) Richard C. Smith, Chicago, to the Naval Medical Research Institute, NNMC, Bethesda, Md.
Lieut. (jg) Earl A. Thompson, San Francisco, Calif., to the Naval Air Station, Anacostia, Washington, D. C.
Lieut. (jg) Joseph A. Witt, Denver, Colo., to the Naval Hospital, Mare Island, Calif.
Lieut. (jg) Collinson P. E. Burgwyn of Petersburg, Va.
Lieut. (jg) James B. Lynch of Brooklyn.
Lieut. (jg) Richard J. Stanwood of Mount View, Calif.
Lieut. (jg) Edwin R. Wallace *III of Memphis*, Tenn.
Lieut. (jg) Robert T. Whalen of Hempstead, N. Y.

NEW REGULAR OFFICERS

The following reserve medical officers on active duty have been appointed to the regular Navy Medical Corps:

Lieut. Comdr. Vincent A. Balkus of Philadelphia.
Lieut. Comdr. Richard E. Kelley of Houston, Texas.
Lieut. Comdr. Newell Nay of Santa Barbara, Calif.
Lieut. Alexander C. Hering of Mount Kisco, N. Y.
Lieut. Merrill E. Speelman of Columbus, Ohio.
Lieut. (jg) Ernest A. Balkey of Pawtucket, R. I.
Lieut. (jg) Donald J. Perry of Artissia, N. Mex.
Lieut. (jg) John J. Dempsey of Upper Darby, Pa.
Lieut.(jg) Chester LeRoy Klein of Redlands, Calif.
Lieut. (jg) Everett R. Lerwick of St. Louis.
Lieut. (jg) Robert F. Neal of Elmwood, Tenn.

PERSONALS

Comdr. W. F. Lyons, U. S. Naval Air Station, Jacksonville, Fla., has recently been certified by the American Board of Preventive Medicine and Public Health.

AIR FORCE

BRIGADIER GENERAL KENDRICKS

Edward J. Kendricks, of Alpena, Mich., has been promoted to the rank of brigadier general in the U. S. Air Force. General Kendricks is director of Staffing and Education of the newly created Air Force Medical Service. In 1932 he was graduated from the Army Medical School and the Army Medical Field Service School; in 1934 he entered the School of Aviation Medicine; in 1942 he joined the Ninth Air Force in Cairo, Egypt, as surgeon, and in 1946 he became chief of the Aero-Medical Laboratory at Dayton, Ohio. General Kendricks has been awarded the Legion of Merit with cluster, the Soldier's Medal and the Bronze Star.

PERSONAL

Brig. Gen. Michael G. Healy, surgeon of the Continental Air Command, Mitchell Air Force Base, New York, was retired October 31, after thirty years of active service.

TRAINING IN CIVILIAN INSTITUTIONS

A program of advanced training in civilian institutions for medical officers of the Air Force Medical Service in twenty-one fields of medical and dental specialties for the fiscal year 1951 was announced November 1 by Major Gen. Malcolm C. Grow, the Surgeon General.

The majority of courses will be at the graduate level of education, although they may not lead to a graduate degree. Such training is part of the career program established in the Air Force Medical Service and will provide the Air Force with a flow of well trained, qualified personnel. The courses to be offered are: anesthesiology, cardiology, medicine (internal), ophthalmology, radiology, general surgery, dermatology and syphilology, bacteriology and virology, physiology, bacteriology, biologic chemistry, public health, psychology, oral surgery, orthodontia, dental prosthesis, nutrition, physical therapy, occupational therapy and rehabilitation.

PUBLIC HEALTH SERVICE

POSITIONS OPEN WITH THE WORLD HEALTH ORGANIZATION

The U. S. Public Health Service has been notified that the World Health Organization is recruiting for the following staff positions:

Chief of Section on Environmental Sanitation
Medical Officer in Charge of Biological Standardization
Medical Officer Venereal Diseases—Serologist
Research Assistant Mental Health Section—Headquarters
Medical Officer—Assistant Chief of Section on Tuberculosis
Consultant in Social and Cultural Aspects of Operational Services
Medical Officer—Venereal Diseases (Assistant Chief of Section)
Regional Adviser on Environmental Sanitation
Regional Medical Adviser on Venereal Diseases
Regional Medical Adviser on Malaria
Regional Medical Adviser on Tuberculosis

For information candidates should communicate with Dr. Fred L. Soper, Regional Director, World Health Organization, 2001 Connecticut Avenue, N.W., Washington 8, D. C. There are at present regional offices also in New Delhi, India, and in Alexandria, Egypt.

THE THOMAS PARRAN SCHOLARSHIP

Dr. Thomas Parran's former associates in the U. S. Public Health Service have established, through a $5,000 grant, a Thomas Parran Scholarship at the Pittsburgh Graduate School of Public Health. The presentation was made by Dr. Charles L. Williams Sr., Assistant Surgeon General, in the office of the chancellor of the University of Pittsburgh. The principal of the fund will be administered by the University, and from time to time additional contributions will be made. Income from the fund will be used to pay the tuition for at least one student during each session. Funds for the scholarship will be provided by voluntary contributions from present and former personnel of the U. S. Public Health Service in appreciation of the leadership of Dr. Parran in public health, especially during his incumbency as Surgeon General from 1936 to 1948. Among those present at the presentation were the deans of the University of Pittsburgh's schools, the committee on the Pittsburgh Medical Center development, representatives from industrial and educational foundations and the trustees of the Mellon Educational and Charitable Trust. Dr. Parran was named dean of the Graduate School of Public Health, which was established at the University of Pittsburgh in 1948. The offices of the school at present are in the Municipal Hospital; no students have been enrolled as yet, but appointments have been made to the faculty.

SCHOOL FOR MEDICAL RECORD LIBRARY TRAINING

The U. S. Public Health Service has established the first school for medical record library training in the federal services. The training course is approved by the Council on Education and Hospitals of the American Medical Association. The course includes two years of instruction in the Baltimore Junior College, leading to the degree of Associate in Arts, followed by a year of specialized training in the U. S. Marine Hospital, Baltimore, Md. Students who already have 60 semester hours of class work creditable toward a degree may be accepted for the third year (50 weeks) of specialized training in the hospital. Graduates of this course may be given an opportunity to remain in the Public Health Service, but are not obligated to do so.

Further information may be obtained from the Medical Records Section, Division of Hospitals, U. S. Public Health Service, Washington 25, D. C.

VETERANS ADMINISTRATION

NEUROPSYCHIATRIC SEMINAR

John C. Whitehorn, M.D., psychiatrist in chief of the Johns Hopkins Hospital and president-elect of the American Psychiatric Association, will conduct a neuropsychiatric seminar at the Veterans Administration Hospital, Gulfport, Miss., Nov. 26 and 27, 1949, for the residents at that hospital.

RECORD HIGH HOSPITAL ADMISSIONS

About 53,000 ex-servicemen and women were admitted to Veterans Administration hospitals and hospitals under contract to the Veterans Administration during August, a record high for any one month. Previously, the highest number of admissions was 51,000, during March of this year. About 46,000 of the August admissions were in the general medical and surgical classification.

PERSONAL

Dr. Ralph Tovell, chief of anesthesiology at Hartford Hospital, Hartford, Conn., has been appointed chairman of the Veterans Administration Professional Service Consultant Group, succeeding Dr. R. Glen Spurling, clinical professor of surgery, University of Louisville, who served in this capacity for two years. During World War II, Dr. Tovell served three and a half years in the Army. He was senior consultant of anesthesia in the European Theater of Operations and was awarded the Legion of Merit.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Allison, Fred Jr................Auburn
Owens, Thomas M............Gadsden
Payne, Edmund C. Jr.........Newcastle
Robinson, Jo. N..............Talladega
Simpson, William H..........Stevenson
Tally, William J.............Stevenson
Wakefield, Jonh R............Anniston

Arizona

Gibbons, Glen A...............Phoenix

Arkansas

Barlow, Donal E...............Dermott
Felts, William R. Jr..........Judsoma
Fotioo, George............Hot Springs
Kilbury, Merlin J. Jr.......Little Rock
Patton, Gerald K..........Little Rock
Schirmer, Jacob F...............Corning
Stewart, James K..........Little Rock
Thompson, James B...............Paris
Thornton, William D...........Forester
Wilkins, Walter J. Jr.......Pine Bluff

Colorado

Barber, James W..............Denver
Beatty, Eugene C. Jr............Denver
Knapp, Harry G. R...........Silverton
McMeel, Joseph A. Jr..........Denver
Metcalf, David R...............Boulder
Stiles, Frank C.................Denver

Connecticut

Carrabba, Salvatore R.........Hartford
Cary, James M..................Hartford
Cooke, Robert E...........New Haven
Kennedy, John J. Jr.........New Haven
Larkin, Charles L. Jr.........Middlebury
Mandell, Marshall..............Norwalk
Minor, James V. Jr..........New Haven

District of Columbia

Akman, Leonard C.........Washington
Ammerman, Harvey H......Washington

Florida

Debusk, Franklin L.........Gainesville
Hodes, Richard S..........Barberville
Knight, Frederick C.............Tampa
McMillan, Jesse C...............Miami

Georgia

Allgood, Henry P...............Atlanta
Bridges, William L. Jr............Sumner
Clay, Calder B. Jr...................Macon
Derrick, John R.....................Clayton
Duke, Tom W........................Helena
Holliday, Pope B. Jr.......Fort Benning
Lattimore, Thomas J.............Macon
McArthur, Thomas E............Macon
West, Edward M................Atlanta

Idaho

Floyd, Vaun T...................Boise
Roberts, Grover A.............Caldwell

Indiana

Craig, Reuben A..............Kokomo
Donner, Paul G..................Columbus
Goodall, Robert J..............La Porte
Graf, John P................Bloomington
Hutchison, Donald R.........Richmond
Kerr, Charles M..........Bloomington
King, Harold.....................Bedford
Krieger, James S.........Michigan City
Lafollette, Robert E.......New Salisbury
Lehman, Harold B...............Berne
Mertz, John H. O...........Indianapolis
Parshall, Dale B..........South Bend
Patterson, Jack W...........Indianapolis
Weatherholt, James W......Fort Wayne
Zeiger, Irvin L..............Indianapolis

Iowa

Cooper, Dean C............Fort Dodge
Hall, Gilbert R.............Spirit Lake
Hoyt, John L...............Greenfield
Jones, William E..................Ames
Klunder, Otto J............Davenport
Kool, Kenneth A...........Iowa City
Kruse, Otto E....................Lisbon
Rutledge, John D.........Emmettsburg
Weih, Jack E...................Clinton

Kansas

Gans, Frederick A.............Abilene
Peters, Dale W.............McPherson
Smith, William T...............Topeka
Steeples, George L. Jr..........Wichita
Wilder, Lowell E..........Fort Scott
Wolfson, Charles.............Lawrence

Kentucky

Brewer, McHenry S...........Lebanon
Gullett, Ralph L.........West Liberty
Hunter, Sylvester G...........Ashland
Jones, David M...............Wilmore
Zimmerman, Guy........Mount Sterling

Louisiana

Bordelon, Howard M.......Lake Charles
Causey, Wren M. Sr.......New Orleans
Cox, Lawson G.................Minden
Emmett, Robert O.........Lake Charles
Faust, Richard A...........New Orleans
Harris, Erle W.............Shreveport
Jones, Peron O............Baton Rouge
Kimbrough, Thomas A.....New Orleans
Kroll, Vernon R.........New Orleans
Massony, Angelo A..........Waterproof

Maine

Sheehy, Thomas J. Jr.........Augusta

Maryland

Arnold, Gayle G............Baltimore
Benson, Jean L.........Fort Washington
Goetz, Abraham A.........Hagerstown
Harley, John B............Brunswick
Sacks, Sidney...............Baltimore

Massachusetts

Bush, Robert T............Springfield
Czekanski, Andrew G.........Dorchester
Gamble, James L. Jr.........Brookline
Hoar, Carl S. Jr...........Williamstown
Hurwitz, Joshua J..........Chestnut Hill
Joy, Robert A.......Newton Highlands
Krasner, Bernard..............Quincy
McNally, Joseph T...........Lawrence
Mezer, Robert R.........Newton Center
O'Shea, John J............Hyde Park
Perkins, John B..........Northampton
Price, Edward B. Jr............Waban
Robinson, John C..........Blandford
Roy, Louis E..............Southbridge
Scannell, Robert J..........Cambridge
Taylor, Warren J..............Dedham
Young, Eliot....................Saugus

Michigan

Alger, George D..............Saginaw
Ashe, Robert M..................Detroit
Dickison, George J.....Sault Ste. Marie
Dustin, Richard E............Tecumseh
Hurley, Albert M.............Saginaw
Kenfield, William J..........Royal Oak
Kline, Hershel A....................Niles
Sargent, Richard C............Detroit
Van Arsdale, William L. ....Marion
Waterman, Donald F.....Grand Rapids

Mississippi

Hays, Freeman C..............Sherman
Labarre, William E.........Yazoo City
Merritt, Charles W................Boyle

Missouri

Deane, Garrett E..............Clayton
Durkee, William R.........Kansas City
Furla, Gus J.................St. Louis
Jones, Ralph H..............Marshall
Lee, Robert E.........Webster Groves
Martt, Jack M................Clayton
Powell, Edwin M...........Springfield
Salyer, Charles P............Cassville
Scabaugh, W. O. L.......Cape Girardeau
Shifrin, Alexander..........Kansas City
Stacey, Wallace R...............Sparta
Zimmerman, Joe A............Kennett

Montana

Movius, Andrew M............Billings

Nebraska

Gatham, Leroy T................Gurley
Halley, Tullius W..........Scottsbluff
Harman, Leo D.............Pawnee City
Herpolsheimer, Robert W.......Seward
Hinrichs, Edward J............Omaha
Kuehn, Gerald A..............Fullerton
Maly, James C.................Crofton
Osborn, Donald O...............Omaha

New Hampshire

Robert, Roger J. P........Manchester
Shedd, Donald P.................Keene

New Jersey

Almons, Harold D............Millburn
Bruno, Anthony J............Elizabeth
Connar, Richard G...........Rutherford
Darragh, Francis H.........Hawthorne
Felch, William C.............Plainfield
Hutchinson, Harry F.......Englishtown
Knauer, George Jr...........Elizabeth
Miller, Wade N..........West Orange
Moriarty, Joseph F............Passiac
Primich, Frank J...........Weehawken
Randelman, Arthur H..........Trenton
Reiber, David E.............Bloomfield
Strobel, Vernon E.........Short Hills
Wanderman, Herbert...........Boonton

North Carolina

Andrews, Leon P...........Wilmington
Bell, William H. Jr............Newport
Davis, John W..............Charlotte
Flynn, John E....................Tryon
Hare, Roy A. ....Durham
Kornegay, Raymond D...Seven Springs
Larkin, Ernest W. Jr.......Washington
MacBrayer, Lewis B. Jr.....Greensboro
Nicholson, John H...........Greenville
Ogburn, Paul L..............Charlotte

North Dakota

Dahl, Hartvig A.............Jamestown
Morrow, Thomas F.......North Dakota
Togstad, Theodore.............Maddox

Vermont

Backup, Clifford E..............Jericho
Elliott, Wilfred T.........St. Johnsbury

Wyoming

Dixon, Raymond E............Buffalo

Hawaii

Chalmers, John F............Honolulu
Fong, Willis M..............Honolulu
Harada, Thomas T...........Honolulu

Puerto Rico

Axtmayer, Robert W...........Santurce
De Guzman, Rafael M..........Santurce
Diaz-Bonnet, Rafael B.......Rio Piedras
Padilla, Angel F.............Cabo Rojo

Mexico

Rish, Benito B............Mexico City

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CONNECTICUT

Psychoanalytic Fellowships.—The department of psychiatry, Yale University School of Medicine, New Haven, has received from the Michigan Yale–Phillips Educational Corporation five fellowships of $1,000 each to help defray the expense of psychoanalytic training of young teachers and scientists. Members of the full time faculty and advanced graduate students (residents) of Yale University who are accepted for training at an approved psychoanalytic institute are eligible for application. Applications (five typewritten copies) should be accompanied by a brief curriculum vitae and lists of publications, an explanation why the applicant is interested in psychoanalytic training and a statement of why the applicant seeks such fellowship aid, including the financial necessity for it. Applications will be reviewed by a faculty committee: John A. Dollard, Ph.D., and Drs. Clements C. Fry, Lawrence S. Kubie, Frederick C. Redlich and Milton J. E. Senn. Personal interviews of the applicants by members of the committee may be requested. Applications should be addressed to F. C. Redlich, M.D., 333 Cedar Street, New Haven 11, Conn.

DISTRICT OF COLUMBIA

Personal.—Theodore Koppanyi, Ph.D., professor of pharmacology, Georgetown University School of Medicine, has been elected an honorary member of the Society of Pharmacology and Therapeutics of the Argentine Medical Association.

Dr. Portmann to Lecture at University. — Georgetown University Medical Center announces that Prof. Georges Portmann of the University of Bordeaux, France, will give his annual course in otorhinolaryngology, esophagoscopy, bronchoscopy and surgery of the neck in Washington for two weeks beginning April 17, 1950. For information communicate with Dr. James A. Flynn, 1511 Rhode Island Avenue N.W., Washington, D. C.

ILLINOIS

Operation Catch. — The University of Chicago's research project (Operation Catch) in tuberculosis-like diseases has been extended to include 11 southern Illinois colleges and high schools. A unit in the nationwide program of skin testing and roentgen study of young adult populations, Operation Catch (calcification, tuberculin, coccidioidin, and histoplasmin) is sponsored by the University of Chicago, the U. S. Public Health Service and the Illinois Department of Public Health. Miniature roentgenograms and tuberculin and histoplasmin skin tests will be taken in a study to determine the prevalence among students of tuberculosis-like diseases. A mobile x-ray unit, headed by Dr. William C. Beadenkopf, Dr. J. Thomas Grayston and Dr. Jeanne M. Ward of the University of Chicago Clinics, was sent out October 23 for a three week program in southern Illinois. Emphasis in the survey will be placed on histoplasmin sensitivity. On the southern Illinois trip the University of Chicago staff of three doctors and two nurses expected to examine daily 500 students and faculty members who volunteer for the tests.

Chicago

Joint Branch Meeting. — The North Side Branch of the Chicago Medical Society will hold a joint meeting with the Northwest Side Branch December 1 at 6:30 p. m. at the Drake Hotel. Dr. Samuel F. Marshall, Lahey Clinic, Boston, will speak on "Gastric Surgery" and Dr. Walter L. Palmer, University of Chicago, on "The Treatment of Peptic Ulcer."

Lecture—Is the Welfare State the Farewell State?—Dr. Herman L. Kretschmer, clinical professor of urology (Rush) emeritus, will deliver the presidential address at the annual meeting of the Institute of Medicine of Chicago December 6 at the Furniture Club of America, 666 N. Lakeshore Drive. His subject will be "Is the Welfare State the Farewell State?"

Personals.—Dr. Theodore Cornbleet and Dr. Theodore J. Wachowski have been promoted to the rank of professors at the University of Illinois College of Medicine.——Dr. Michael H. Streicher spoke before the Section on General Practice of the Los Angeles County Medical Association September 15 on "Clinical Approach in the Management of Infectious Diseases of the Colon."——Leonard B. Nice, Ph.D., professor of physiology and pharmacology at the Chicago Medical School, has been elected secretary of the Illinois section of the Society for Experimental Biology and Medicine.

Census of Arthritics. — Through the cooperation of the local press and radio the Illinois Chapter of the Arthritis and Rheumatism Foundation is conducting a census of arthritic persons in the Chicago area. Those who suffer from arthritis are asked to communicate with the Illinois Chapter, which then mails the arthritic subject a questionnaire to be filled in with data concerning medical history, heredity, environment and other factors. The office address is 69 West Washington Street.

Joseph A. Capps Prize. — The Institute of Medicine of Chicago is offering the Joseph A. Capps Prize of $400, founded by Dr. and Mrs. Edwin R. LeCount, for the most meritorious investigation in medicine. The investigation may also be in the fundamental sciences, provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work in 1947 or thereafter. Manuscripts must be submitted to the secretary of the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago 1, not later than December 31.

KENTUCKY

Hospital News.—Construction of a four story annex, costing $450,000, to the Good Samaritan Hospital at Lexington will be started this fall. The new unit will have 60 beds, which will increase the hospital's bed capacity to 350. The third floor will be a maternity ward, and the new wing will be designed to form an extension to the present maternity section, bringing the total number of bassinets from 35 to 50. The surgery section will be modernized to include air-conditioning equipment for all operating rooms.

Physicians Honored at State Meeting.—Dr. John Walker Moore, Louisville, retired dean of the University of Louisville School of Medicine, was awarded a medal for outstanding medical services at the public meeting held in connection with the annual convention of the Kentucky State Medical Association at Owensboro in October. The E. M. Howard Medal for distinguished medical service was presented to Dr. Addie M. Lyon, state welfare commissioner, and J. Watts Stovall, Grayson, and the award for a general practitioner to Dr. John M. Clayton, West Louisville.

MAINE

Cooperative Graduate Study at Jackson Laboratory.—The Roscoe B. Jackson Memorial Laboratory is beginning its fall program of cooperative graduate study, which makes the laboratory's research facilities available, without tuition fee, to qualified graduate students. Credits for work at the Jackson Laboratory may be applied toward masters or doctors degrees in biology, zoology, bacteriology, genetics, psychology or allied fields. The research program of Jackson Laboratory includes many projects dealing with tumor-inciting agents and tumor immunity, the genetics of normal growth, animal behavior, endocrinology and physiology. Cooperating graduate schools to date include: Northwestern University, University of Chicago, University of Illinois, Johns Hopkins University, Harvard University, University of Michigan, Washington University, Cornell University, University of Rochester, Ohio State University, University of Maine, Pennsylvania State College and Brown University. Arrangements may usually be made at other schools, though individual consideration is always necessary. The cooperative program is approved for the subsistence and other allowances under the G. I. Bill of Rights. There are also at times assistantships available for well qualified students, and the laboratory will assist students in securing predoctoral fellowships such as those offered by the National Institutes of Health and the American Cancer Society. Direct inquiries to Chairman, Committee on Graduate Study, R. B. Jackson Memorial Laboratory, Box 78, Bar Harbor, Maine.

Dr. Leslie C. Dunn, Sc.D., head of the genetics department of Columbia University, has been named president of the new board of scientific directors of the Roscoe B. Jackson Memorial Laboratory in Bar Harbor. Other members include Dr. James B. Murphy, head of the Cancer Research Department of the Rockefeller Institute, New York, as vice president; Clarence C. Little, LL.D., director, Jackson Memorial Laboratory; Frank A. Beach, Ph.D., professor of psychology at Yale University, New Haven, Conn.; Homer W. Smith, Sc.D., professor of physiology at New York University; Merle A. Tuve, Ph.D., physics professor at Johns Hopkins University, Baltimore; Edwin B. Wilson, Ph.D., Brookline, Mass., vice president of the National Academy of Sciences, and Sewall Wright, Sc.D., professor of genetics at the University of Chicago.

MICHIGAN

Personal.—Dr. Leo H. Bartemeier, associate professor of psychiatry at Wayne University College of Medicine, Detroit, and secretary of the American Psychoanalytic Association, was guest of honor at a dinner given by members of the Detroit Psychoanalytic Society on the occasion of his election as president of the International Psychoanalytic Association in Zurich, Switzerland, August 18.

Million Dollar Grant for Kresge Science Library.—A million dollar grant from the Kresge Foundation to Wayne University, Detroit, to erect the Kresge Science Library building has been announced. It will be the first Wayne University structure to be financed by private philanthropy. The three story building will house the university's Kresge-Hooker scientific collection, one of the world's most complete chemical libraries, and other scientific books and periodicals. Since the new library, to be located on the east side of Second Avenue, between Merrick and Kerby, will be near the Technology Department of the Detroit Public Library, the city will have in one center facilities for science study and research. The library will provide study space for 400 undergraduate students and 235 university faculty members, industrial research workers, visiting scholars and advanced students. Stack space will accommodate the present 50,000 science volumes and 800 science periodicals, as well as future accessions, and there will be a complete microfilm laboratory for recording materials which could not be made available without such special facilities, seminar rooms and a lecture room. The Hooker Library was brought to Wayne from Central College, Missouri, in 1943, when the Kresge Foundation contributed $100,000 of a $200,000 fund for that purpose. The library, which includes irreplaceable sets of science journals, was originally assembled by Dr. Samuel Cox Hooker, a distinguished chemist. Later designated as the Kresge-Hooker Scientific Library, the collection has occupied inadequate quarters in a corner of Wayne's main building. The new Kresge Science Library building will be integrated with the total University library service program.

NEW MEXICO

Death from Bubonic Plague.—The Associated Press reported from Santa Fe November 8 that bubonic plague caused a death in the southern part of the state. The state health department, according to the report, said the victim was a 7 year old boy of San Patricio, a village 50 miles west of Roswell. He died at the U. S. Marine Hospital at Fort Stanton, where the disease was diagnosed. Two cases of plague were traced to wild rodents in northern New Mexico early this summer. The victims recovered after treatment (The Journal, Sept. 24, page 274).

NEW YORK

Society Election.—The Brooklyn Dermatological Society at its recent meeting elected the following officers for the current year: Drs. Irving N. Holtzman, president; Moses Silverman, vice president, and Samuel I. Greenberg, secretary-treasurer. This year is the twenty-fifth anniversary of the founding of the society.

Dr. Raus Heads Department at Syracuse.—Dr. George M. Raus, for the last two years associated with the Institute of Rehabilitation and Physical Medicine, New York University-Bellevue Medical Center, has been appointed head of the new department of rehabilitation and physical medicine at Syracuse University College of Medicine. Dr. Raus will survey the upstate area to learn what present facilities are and how they can be augmented. He will serve in a consulting capacity to various clinics and departments of the medical center.

New York City

Fellowship in Hospital Administration.—The S. S. Goldwater Fellowship in Hospital Administration at Mount Sinai Hospital has been awarded to Mr. William L. Agress, assistant director of the Brooklyn Tuberculosis and Health Association. The fellowship provides for a stipend, full maintenance in the hospital, supervised participation in its management, work visits to other hospitals and study at Mount Sinai's library of Dr. Goldwater's writings on institutional administration and planning.

Academy Donates 12,000 Books.—The New York Academy of Medicine has announced its donation of 12,000 volumes to Southwestern Medical College in Dallas, Texas. These volumes are the larger portion of a gift of 20,000 volumes received by the New York Academy of Medicine in 1900 from the New York Public Library when the academy in effect took over the medical part of the city library service. Southwestern Medical College, founded in 1943, is in the process of building up its library.

Symposium on Inhalation Therapy.—The Committee on Public Health Relations of the New York Academy of Medicine, in cooperation with the New York Association of Oxygen and Ambulance Services, will present a symposium on inhalation therapy, consisting of exhibits, demonstrations, motion pictures and lectures, at the Academy building, December 5-10. The purpose of the symposium is to bring to physicians, as well as to hospital administrators, resident staffs and nurses, information as to recent developments in this aspect of therapy and the efficient use of the equipment available for it. Subjects of succeeding evening lectures, which begin at 8:30 p. m., are: Anoxia in Clinical Medicine; Pediatric Aspects of Inhalation Therapy; Asthma, Comatose States and Infantile Paralysis and Their Treatment by Inhalation Therapy and Respirators; Inhalation Therapy in the Treatment of Cardiac Diseases, and Inhalational and Aerosol Therapy in Pneumonia, Pulmonary Edema and Bronchiectasis.

OHIO

Dr. Kleinschmidt Receives Prentiss Award.—Dr. Harry E. Kleinschmidt, New York, received the 1949 Elisabeth Severance Prentiss National Award in Health Education November 14. Given annually since 1944 by the Cleveland Health Museum, the award serves to honor the memory of the museum's first foundation benefactor, and to encourage outstanding work in the field of health. Dr. Kleinschmidt was formerly director of health education for the National Tuberculosis Association (1927-1942) and more recently medical director of the North Atlantic Area, American Red Cross (1942-1949).

Cerebral Palsy Center.—Bowling Green State University opened its new Cerebral Palsy Center October 10 with 12 children from the state selected to undergo therapy. The university and the Ohio Society for Crippled Children are co-sponsors of the center. Part of the work of university students of speech and hearing therapy will be at the center. Miss Adeline McClelland, director of the Speech and Hearing Clinic at the university, will be also director of the center. The clinic and center are housed in the north wing of the new $180,000 speech building. A $35,000 dormitory is being erected to house clinic patients. Consultants provided for the Bowling Green center by the Ohio Society for Crippled Children are Dr. Winthrop M. Phelps, at the Children's Rehabilitation Center, Cockeysville, Md.; Harold Westlake, Ph.D., director of the Speech and Hearing Clinic at Northwestern University, Chicago; Drs. Albert L. Bershon and Jack W. Millis, orthopedists of Toledo, and Dr. Frank V. Boyle, Bowling Green, medical consultant.

PENNSYLVANIA

Society Election.—At the annual dinner meeting of the Pennsylvania Psychiatric Society held in September the following officers were elected: Drs. Harold L. Mitchell, Pittsburgh, president; Arthur P. Noyes, Norristown, president-elect, and Philip Q. Roche, Philadelphia, secretary-treasurer.

Course in Electrocardiography.—Sixty Pennsylvania physicians from 40 counties have enrolled for a special study of electrocardiography arranged by the Medical Society of the State of Pennsylvania and being held on seven consecutive Thursdays, beginning November 10 in the Nurses' Auditorium of the Harrisburg Hospital. The faculty will consist of Drs. Thomas M. Durant, professor of clinical medicine, Temple University School of Medicine, Philadelphia; John B. Levan, chief, cardiac clinic, St. Joseph's Hospital, Reading; Charles W. Smith, Constantine P. Faller and Kenneth E. Quickel, all of Harrisburg Hospital.

TEXAS

Personal.—Dr. Curtis H. Baylor, formerly professor of medicine at the American University in Beirut Lebanese Republic, is now associated with the Texas Company as assistant medical director and is in charge of the clinical services of the company at the home office in New York.

Gift to Cancer Hospital.—The M. D. Anderson Hospital for Cancer Research, Houston, has received a gift of more than $250,000 through the will of the late William Heuermann, San Patricio County farmer. A fund of $5,000 to buy radium for use in cancer treatment in Corpus Christi is also provided.

University Appointments.—The University of Texas Medical Branch, Galveston, has announced the following appointments to the staff; Marcella Frantz, Ph.D., assistant professor of anatomy; John G. Bieri, Ph.D., assistant professor of bacteriology and parasitology; Austin Foster, Ph.D., assistant professor of neuropsychiatry, in charge of clinical psychology; Dr. Charles C. Morris II, Baltimore, assistant professor of pediatrics, and Dr. Earl B. Ritchie, Galveston, associate professor of dermatology and syphilology.

VIRGINIA

State Medical Election.—At the recent meeting of the Medical Society of Virginia the following officers were elected: Drs. Walter C. Caudill, Pearisburg, president, and C. Lydon Harrell of Norfolk, president-elect. Agnes V. Edwards is executive secretary-treasurer.

Students Choose General Practice.—A committee of the Medical College of Virginia, Richmond, interviewed each of its 92 senior medical students to aid them in the choice of a place to intern. It was discovered that 53.26 per cent of the students indicated an intention to enter general practice. In addition, 3.26 per cent of the 92 students were considering general practice as against surgery, and 1.09 per cent were undecided as to general practice or obstetrics.

This trend of medical students toward entering general practice is evident also among the freshman medical students at the Medical College of Virginia.

PUERTO RICO

BCG Vaccination Program.—Dr. Harold S. Barrett, chief, vaccination section, U. S. Public Health Service, is supervising the training program for vaccination with BCG in Puerto Rico now in progress. Vaccination of school children throughout the island started October 6. It is estimated that about 800,000 children will undergo tests during the two years of the BCG vaccination program and that about 300,000 children will be vaccinated with BCG. Lectures and demonstrations on the application of tests and BCG vaccination technics will be given at the School of Tropical Medicine. Training will be offered to two medical supervisors. During the first year of the program all school children will be vaccinated with BCG, including children of school age who are not attending classes. During the second year, children of preschool age, including infants, will be vaccinated. Technicians from the U. S. Public Health Service are assisting in this training course.

GENERAL

Western Surgical Association Meeting.—The annual meeting of the Western Surgical Association will be held in Santa Barbara, Calif., with headquarters at the Biltmore, November 29-December 2, under the presidency of Dr. Robert L. Sanders, Memphis, Tenn. Among the speakers will be Sir Heneage Ogilvie, London, England.

Pamphlet Available on Graduate Medical Work.—The pamphlet "Fellowships, Funds and Prizes Available for Graduate Medical Work in the United States and Canada" has been brought up to date and published by the Association of American Medical Colleges, 5 South Wabash Avenue, Chicago 3. Individuals may secure a copy for $1.

Meeting on History of Medicine.—The American Association of the History of Medicine will hold its next annual meeting in Boston May 21-23, 1950, with headquarters at the Somerset Hotel. Members of this association who wish to submit papers for consideration should communicate with the Chairman of the Program Committee, Dr. Harold Bowditch, 44 Harvard Avenue, Brookline, Mass. No papers will be considered after Jan. 15, 1950.

Pharmaceutical Association Elects Officers.—The American Pharmaceutical Association reports that the following officers have been elected by mail ballot and will be installed at the annual convention in Atlantic City next spring. Henry H. Gregg, Minneapolis, president-elect; Roy A. Bowers, Albuquerque, N. Mex., first vice president-elect, and Louis J. Fischl, Oakland, Calif., second vice president-elect. Present officers of the association are: Glenn L. Jenkins, Ph.D., Lafayette, president; Harold C. Kinner, Washington, D. C., first vice president, and Leib L. Riggs, Portland, Ore., second vice president. The secretary and treasurer are elected by the house of delegates.

Markle Foundation Grants. — Grants totaling about $940,000, the majority payable over five years, were made to medical colleges and other educational institutions by the John and Mary R. Markle Foundation in the eighteen months beginning January 1948. Among the institutions receiving grants were The Bowman Gray School of Medicine of Wake Forest College, Winston Salem, N. C., $32,800; Duke University School of Medicine, Durham, N. C., $50,800; New York University College of Medicine, $27,500; Medical College of Virginia, Richmond, $34,300; University of Illinois College of Medicine, Chicago, $33,000; Washington University School of Medicine, St. Louis, $35,500; Yale University School of Medicine, New Haven, Conn., $62,000; University of Pennsylvania School of Medicine, Philadelphia, $50,000; University of California, Berkeley, $15,000, and Association of American Medical Colleges, for support of the Medical Film Institute, $22,500.

Society Elections. — The American Society of Physical Medicine has elected the following officers: Dr. Charles O. Molander, Chicago, president; Dr. Frances Hellebrandt, Richmond, Va., president-elect, and Dr. Max K. Newman, Detroit, secretary-treasurer.——The Southwestern Surgical Congress in September chose the following officers for the coming year: Drs. Thomas G. Orr, Kansas City, Mo., president; Leo J. Starry, Oklahoma City, president-elect, and Charles R. Rountree, Oklahoma City, secretary-treasurer.——The American College of Surgeons at its meeting in October chose the following officers for the coming year: Drs. Frederick A. Coller, Ann Arbor, Mich., president; Henry W. Cave, New York, president-elect; Paul B. Magnuson, Chicago, secretary, and Warren H. Cole, Chicago, treasurer.

Greek Doctor Receives Woman's Fellowship Award.—Dr. Marion D. Kolbye, chairman of the Fellowship Committee of the American Federation of Soroptimist Clubs, has announced the award of a $3,000 fellowship to Dr. Dora Papara of Athens, Greece, for study at the University of Pennsylvania Medical School, Philadelphia. The Soroptimist International Association, numbering in its American federation 11,000 executives and professional women in the United States, Canada and South America, has set up a fellowship fund to encourage progress in distinctive fields of endeavor. Dr. Papara was selected for her achievements in neuropsychiatric treatment of abnormal children. She was appointed to her present position as chief of the Psychiatric Clinic of the Public Asylum in Athens in 1944.

Awards for Scientific Stories.—The National Society for Medical Research held a contest to stimulate the writing and publication of accounts which tell the story of medical research. "Blue Baby Research," a story published by *Life* magazine, received the first prize of $500, and a $100 runner-up award went to Herbert Yahraes of Stanfordville, N. Y., author of "Science Tries You Out on the Dog," published in *Popular Science*. The judges who chose the best published research story were Drs. Rolla E. Dyer, director of the National Institutes of Health, and Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; Steven Spencer, associate editor of the *Saturday Evening Post*; David Dietz, science editor of the Scripps-Howard Newspapers, and Watson Davis, director of "Science Service."

Course for Employment and Placement Counselors.—Alpha Gamma Delta, international women's fraternity, and the National Society for Crippled Children and Adults have named seventeen persons as recipients of fellowships to attend a training course for employment and placement counselors working with the cerebral palsied and other severely handicapped persons. The fellowships, $350 each, are awarded through a grant from the fraternity and will pay tuition and maintenance during the four week course which began on November 7 and will continue through December 2. The course will be held at the Institute of Rehabilitation and Physical Medicine, New York University. This is the second such course held this year designed to better equip counselors to meet employment and placement problems of the handicapped.

Brookhaven National Laboratory.—The appointment of Dr. Donald D. Van Slyke as assistant director for biology and medicine and Dr. Lee E. Farr as chairman of the medical department at Brookhaven National Laboratory, Upton, Long Island, N. Y., has been announced. Dr. Van Slyke is a member emeritus of the Rockefeller Institute for Medical Research, with which he has been associated since 1907. He is the recipient of an honorary M.D. from the University of Oslo, the Willard Gibbs medal from the American Chemical Society and the Kober Medal of the Association of American Physicians. He is editor of the *Journal of Biological Chemistry*. Dr. Farr is at present director of research and pediatrician in chief of the Alfred I. duPont Institute of the Nemours Foundation in Wilmington, Del. He received his M.D. degree from Yale University School of Medicine, New Haven, Conn., in 1933. From 1934-1940 he was at the Hospital of the Rockefeller Institute for Medical Research in Dr. Van Slyke's department. He received a Mead Johson Award of the American Academy of Pediatrics for research on children with nephrosis.

The staff of the medical department for Brookhaven National Laboratory is being selected so that active investigative work on the fundamental problems of medicine and studies on patients with selected types of malignant disease and conditions related to cancer may begin this fall. A completely equipped modern hospital of 42 beds will be available for these purposes.

Medical Research Fellowships.—The medical fellowship board of the National Research Council is now accepting applications for the postdoctoral research fellowships for 1950-1951 under the following program: National Research Fellowships in the Medical Sciences, supported by grants from the Rockefeller Foundation, provide opportunities for experience in research in all branches of medical science. They are open to citizens of the United States or of Canada who hold an M.D. or Ph.D. degree and who, as a rule, are not more than 30 years of age. Welch fellowships in internal medicine, also supported by the Rockefeller Foundation, provide a prolonged period of advanced training to persons of proved research ability. They are open to physicians under 40 years of age who are citizens of the United States. Fellowships in poliomyelitis and related fields are supported by the National Foundation for Infantile Paralysis, Inc. They provide training and experience in the study of virus diseases and in any field contributing to progress in orthopedic surgery. Candidates for fellowships in virus diseases must hold an M.D. or Ph.D. degree. Fellowships in orthopedic surgery are open only to graduates in medicine who have completed one or more years of hospital work in clinical surgery. Applicants must be citizens of the United States. Senior fellowships in poliomyelitis and related fields are also available under grants from the National Foundation for Infantile Paralysis, Inc. Senior fellowships in the field of virus diseases are open to physicians and to holders of the doctorate in the basic sciences; applicants in the four other fields must be graduates in medicine. Fellowships in anesthesiology have been made available by a grant from the American Society of Anesthesiologists. Applicants must have an M.D. degree and at least one year of hospital experience. Fellows will be appointed at a meeting of the Medical Fellowship Board early in March 1950. Applications may begin at any date determined by the Board. For information about these fellowships, address the secretary of the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

Lasker Awards for 1949.—For distinguished accomplishments in medical research and public health administration the 1949 Lasker Awards of the American Public Health Association were conferred on eight persons and two organizations at the annual meeting of the association in New York, October 25. Dr. Haven Emerson, New York, past president, American Public Health Association, and treasurer of the National Health Council, was given a Special Lasker Award "for extraordinary achievement in developing a program of complete local health service in every area of the U. S." An award for outstanding administrative achievement was given to: Miss Marion W. Sheahan, R.N., executive director of the National Committee for the Improvement of Nursing Services, was cited "for distinguished leadership in the fields of nursing and public health." Miss Sheahan is the first non-doctor award recipient. Two other women, Dr. Alice H. Hamilton and Dr. Martha M. Eliot, are former recipients.

Awards for scientific research and accomplishment went to: Dr. Andre Cournand of Columbia University College of Physicians and Surgeons, New York, "for outstanding contributions to the physiology of the circulation in man and the diagnosis and treatment of heart disease"; Dr. Max Theiler of the Rockefeller Foundation "for distinguished experimental work leading directly to the production of two effective vaccines against yellow fever"; Dr. William S. Tillett and L. R. Christensen, Ph.D., of the New York University College of Medicine, jointly, "for the discovery and purification of streptokinase and streptodornase and demonstration of their effectiveness in treatment of certain human diseases," and Edward C. Kendall, Ph.D., and Dr. Philip S. Hench of the Mayo Clinic, Rochester, Minn., "for their chemical, physiologic and clinical studies of adrenal hormones, which culminated recently in the dramatic therapeutic effect of Cortisone in rheumatic disorder."

Lasker Group Awards this year honored: The American Academy of Pediatrics, "for studies of personnel and facilities for the protection of child health," and The Life Insurance Medical Research Fund, "for initiation and support of a program of research into the main cause of disease, cardiovascular disease."

Dr. Emerson's Special Lasker Award consists of $2,500 and a gold statuette on a white ivory base. Individual winners received $1,000 each and a gold statuette.

The 1949 Albert and Mary Lasker Foundation Awards of the Planned Parenthood Federation of America were presented to Dr. George M. Cooper, head of the Division of Preventive Medicine, North Carolina Health Department, and Carl G. Hartman, Ph.D., zoologist. The award to Dr. Cooper recognizes that through his efforts North Carolina became the first state to include birth control in its public health services. The award to Dr. Hartman was for research in embryology and reproduction. The awards, consisting of $500 each and a medallion, were presented October 26 at the federation's annual luncheon in New York.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

Division and State	Week Ended			Jan. 1 to	
	Nov. 5, 1949	Nov. 6, 1948	Median 1944-1948	Nov. 5, 1949	Nov. 6, 1948
New England States					
Maine	8	1	2	443	38
New Hampshire	..	..	1	181	18
Vermont	3	..	1	138	22
Massachusetts	23	..	8	1,728	181
Rhode Island	10	..	1	161	8
Connecticut	15	1	6	590	113
Middle Atlantic States					
New York	126	43	43	5,198	1,264
New Jersey	53	42	13	1,403	757
Pennsylvania	29	24	15	763	693
East North Central States					
Ohio	22	28	28	1,683	1,102
Indiana	16	9	8	1,064	375
Illinois	44	23	23	2,749	1,036
Michigan	63	29	24	2,631	691
Wisconsin	25	30	30	1,010	569
West North Central States					
Minnesota	25	71	12	1,803	1,232
Iowa	35	65	18	1,068	1,034
Missouri	18	8	13	1,289	292
North Dakota	1	2	..	440	115
South Dakota	1	111	1	353	637
Nebraska	18	11	7	617*	674
Kansas	10	5	5	694	293
South Atlantic States					
Delaware	1	1	1	43	129
Maryland	12	6	7	240	108
District of Columbia	3	3	1	102	126
Virginia	9	21	8	317	539
West Virginia	7	6	4	335	159
North Carolina	2	17	12	216	2,419†
South Carolina	2	3	1	100	358
Georgia	10	11	3	211	226
Florida	9	5	4	237	250
East South Central States					
Kentucky	14	8	6	616	193
Tennessee	7	9	9	508	359
Alabama	5	..	..	233	200
Mississippi	2	1	3	316	148
West South Central States					
Arkansas	15	..	..	951	134
Louisiana	1	4	4	216	138
Oklahoma	21	5	3	1,240	844
Texas	52	25	8	2,175	1,636
Mountain States					
Montana	2	1	1	91	68
Idaho	17	3	3	464	104
Wyoming	..	4	1	104	76
Colorado	19	6	4	633	116†
New Mexico	4	..	2	194	75
Arizona	4	7	1	149	115
Utah	11	8	7	260	113
Nevada	..	..	..	15	7
Pacific States					
Washington	14	18	9	555	320
Oregon	11	3	3	275	162
California	79	276	36	2,234	4,426
Total	881	934	...	30,045*	24,372†
Median, 1944-1948	...	...	451	17,888	

* Includes 11 delayed reports.
† Figures changed by corrected reports.

Marriages

William James Hargreaves, Johnstown, Pa., to Miss Audrey Louise Foster of Altoona, September 1.

William Warner Shingleton, Durham, N. C., to Miss Katherine Jane Bruce at Palatka, Fla., August 4.

Benjamin Leighton, Long Beach, N. Y., to Miss Ruth Weisel in New York, September 18.

Mason Cooke Andrews, Baltimore, to Miss Sabine Goodman of Jacksonville, Fla., recently.

Paul P. Norman, Malden, Mass., to Miss Esther Rosalind Brody of Allston, August 28.

Bernard B. Shuer, Brooklyn, to Miss Estelle Rose Drukker in New York, September 11.

William Taffet, Belleville, N. J., to Miss Sylvia Tulchinsky at Newark, August 14.

Lewis Cohen, Detroit, to Miss Betty Bosniak of Brooklyn, August 7.

Deaths

John D. Long ⊕ medical director, U. S. Public Health Service, retired, Guayaquil, Ecuador, South America; University of Pennsylvania Department of Medicine, Philadelphia, 1897; born in Mount Pleasant, Pa., Feb. 12, 1874; commissioned in the U. S. Public Health Service April 9, 1900; during his nearly forty years with the public health service, was in charge of the Plague Suppressive Laboratory in San Francisco from 1912 to 1914 and in Manila on two assignments from 1901 to 1906 and from 1914 to 1918; during the second assignment chief quarantine officer and later director of health for Manila and also professor of hygiene at the University of the Philippines; reorganized the Philippine health services; technical advisor to the minister of hygiene in Santiago, Chile from 1925 to 1927, when he became chief quarantine officer for the Panama Canal Zone, serving until 1928; when on detail from the public health service to the Pan American Sanitary Bureau in 1929, went to Guayaquil to assist in plague eradication; on retirement from the public health service in 1938, became chief traveling representative of the Pan American Sanitary Bureau; a fellow of the American Public Health Association; member of the Association of Military Surgeons of the United States, Alpha Mu Pi Omega fraternity and other scientific societies; decorated with El Merito by Chile and Ecuador, with the Order of Carlos Finlay by Cuba, El Sol by Peru and Vasco Nunez de Balboa by Panama; in 1929 awarded the honorary degree of doctor of science by Washington and Jefferson College of Washington, Pa.; co-author of the Pan-American Sanitary Code; from 1925 to 1927 was vice president of the Far Eastern Association of Tropical Medicine and was instrumental in reorganizing the Chilean health service; died September 18, aged 75.

Louis Simonson, Newark, N. J.; born in New Haven, Conn., Aug. 6, 1885; Tufts College Medical School, Boston, 1908; also a pharmacist; specialist certified by the American Board of Pediatrics; fellow of the American Academy of Pediatrics; member of the American Medical Association, Academy of Medicine of Northern New Jersey and the Essex County Medical Society, where he was chairman of the committee on communicable diseases; served as a school physician and was on the staff of the division of child hygiene; at one time district physician for the city health department; while in Bridgeport served as plant surgeon for the Singer Manufacturing Company, the Dictaphone Corporation, the Bridgeport Brass Company and the Columbia Phonograph Company; for many years affiliated with the Newark Beth Israel Hospital and at the time of his death a member of the staffs of the Newark City and Babies hospitals; for twenty years medical examiner for the Prudential Insurance Company; died September 4, aged 64, of carcinoma of the descending colon.

Lewis Theodore Arthur ⊕ Covington, Ohio; Medical College of Ohio, Cincinnati, 1904; served during World War I; died September 8, aged 72, of arteriosclerosis.

Guy Gabriel Aycock, Franklin, La.; Memphis (Tenn.) Hospital Medical College, 1912; sheriff of St. Mary Parish; served one term as coroner; died in New Orleans September 9, aged 61, of coronary occlusion.

Emma F. Macomber Ayres, Lynn, Mass.; New York Medical College and Hospital for Women, Homeopathic, New York, 1888; died September 5, aged 95.

Thomas Bagley, Santa Ana, Calif.; University of Buffalo School of Medicine, 1889; member of the Medical Society of the State of New York and the American Medical Association; formerly practiced in Buffalo, where he was on the staff of the Buffalo General Hospital; died September 17, aged 96, of cerebral arteriosclerosis.

Seneca Bray Bain, Silver Spring, Md.; National University Medical Department, Washington, D. C., 1899; also a dentist; member of the Medical Society of the District of Columbia and the American Medical Association; died September 3, aged 75.

John Francis Barker, Huntington, W. Va.; University of Kansas School of Medicine, Kansas City, 1934; member of the American Medical Association and the American Urological Association; specialist certified by the American Board of Urology; served during World War II; died September 30, aged 44, of coronary occlusion.

William Henry Beery, Lima, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1907; member of the American Medical Association; past president of the Academy of Medicine of Lima and Allen County; on the staffs of Lima Memorial Hospital and St. Rita's Hospital, where he died September 4, aged 74, of cirrhosis of the liver.

Max Berkovsky ⊕ New York; New York Homeopathic Medical College and Flower Hospital, New York, 1926; member of the American Academy of Dermatology and Syphilology; vice president of the Bronx Dermatological Society; served during World War II; affiliated with Bronx Hospital, Metropolitan Hospital and Mount Sinai Hospital; died in City Island, N. Y.; September 3, aged 48, of coronary thrombosis.

Charles Armistead Blanton, Richmond, Va.; Medical College of Virginia, Richmond, 1881; member of the American Medical Association; emeritus professor of diseases of children at his alma mater; on the staff of the Medical College of Virginia Hospital Division; in 1931 received the honorary degree of doctor of laws from Hampden-Sidney (Va.) College, where he was a trustee; died September 6, aged 90, of arteriosclerotic heart disease.

William Ramsey Blue ⊕ Memphis, Tenn.; Vanderbilt University School of Medicine, Nashville, 1911; formerly on the faculty of the University of Tennessee College of Medicine; fellow of the American College of Physicians; died in the Methodist Hospital, September 8, aged 61, of pulmonary fibrosis.

Jackson Murrell Bowling, Forest Park, Ga.; Medical College of Virginia, Richmond, 1931; member of the American Medical Association; served during World War II; affiliated with the Crawford W. Long Memorial Hospital and Georgia Baptist Hospital, Atlanta, where he died September 6, aged 41, of intestinal obstruction and peritonitis following an appendectomy.

William H. Brummit, Chicago; Meharry Medical College, Nashville, Tenn., 1904; died September 7, aged 69, of acute coronary thrombosis.

Isaac Erastus Burnett, Mars Hill, N. C.; Tennessee Medical College, Knoxville, 1901; died September 1, aged 77, of diabetes mellitus.

Hada M. Burkhart Carlson, Rock Island, Ill.; Keokuk (Ia.) Medical College, 1898; supreme physician for the Royal Neighbors of America; died in the Moline (Ill.) Public Hospital September 10, aged 74, of coronary thrombosis and arteriosclerosis.

Clarington William Caterson, Montrose, Pa.; Jefferson Medical College of Philadelphia, 1891; died in the Binghamton City (N. Y.) Hospital October 2, aged 82, of diabetes mellitus, carcinoma of the prostate and cerebral thrombosis.

William Henry Cleveland, Tupelo, Miss.; Memphis (Tenn.) Hospital Medical College, 1913; member of the American Medical Association; past president and vice president of the Mississippi Public Health Association; served as health officer of Lee and Itawamba Counties; on the staff of the North Mississippi Community Hospital, where he died September 10, aged 61, of coronary thrombosis.

Timothy Francis Cohane ⊕ New Haven, Conn.; Yale University School of Medicine, New Haven, 1897; staff physician at the New Haven County Jail; died in the Hospital of St. Raphael September 7, aged 74.

Aaron Thomas Colnon, St. Petersburg, Fla.; Syracuse University College of Medicine, 1909; veteran of the Spanish-American War and World War I; died September 8, aged 75, of cardiovascular renal disease.

George H. Cooper ⊕ Boise, Idaho; Central Medical College of St. Joseph, Mo., 1905; died September 18, aged 69, of bronchopneumonia.

George Gilbert Crawford, Strasburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the American Medical Association; past president of the Medical Society of Northern Virginia; for many years mayor; member of the Selective Service Draft Board of Shenandoah County during World War II and chairman at the time of his death September 6, aged 73.

Antonio Maria Crispin ⊕ New York; Bellevue Hospital Medical College, New York, 1891; an Associate Fellow of the American Medical Association; formerly affiliated with the French, Columbus and Broad Street hospitals; died September 9, aged 78.

Robey Atkins Crum, Mount Vernon, Ill.; Chicago Medical School, 1933; member of the American Medical Association; past president of the Jefferson-Hamilton Counties Medical Society; died in Glen Hayes, W. Va., September 2, aged 50, of heart disease.

Harry Percy Dawe, Pawling, N. Y.; University of the City of New York Medical Department, New York, 1886;

⊕ Indicates Fellow of the American Medical Association.

health officer of the village of Pawling and police justice for many years; died September 25, aged 86, of chronic myocarditis.

Arthur Winfield Day, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1901; died September 6, aged 73.

Philip Augustus Degnan, Washington, D. C.; Georgetown University School of Medicine, Washington, 1934; member of the American Medical Association; died in the Tuberculosis Sanatorium, Glenn Dale, Md., September 30, aged 40, of cor pulmonale and pulmonary tuberculosis.

Jean Paul du Plessis, Chicago; Loyola University School of Medicine, Chicago, 1918; killed September 8, aged 57, when he fell from an eighteenth floor parapet.

Henry A. Dykes, Hutchinson, Kan.; University of Louisville (Ky.) Medical Department, 1888; served as president and secretary of the state board of medical registration and examination; in 1938 retired as chief medical officer of the Veterans Administration Facility in Wichita after holding the position seventeen years; at one time in charge of the Veterans Hospital in Kansas City, Mo.; died September 19, aged 80, of cerebral hemorrhage.

Julius H. Faribault, Brooklyn; University of Montreal Faculty of Medicine, Montreal, Canada, 1921; affiliated with the Coney Island Hospital; drowned September 12, aged 53, when he slipped and fell into the ocean.

James Louis Fleming ⊕ Chicago; Rush Medical College, Chicago, 1903; formerly on the faculty of Loyola University School of Medicine; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; on the staff of St. Anne's Hospital, where he died October 5, aged 77, of chronic myocarditis.

Arthur Harvill Gray ⊕ Seattle; Vanderbilt University School of Medicine, Nashville, Tenn., 1906; member of the American Academy of Pediatrics; died in Yakima September 9, aged 68, of arteriosclerotic heart disease.

Burt Francis Green ⊕ Hillsdale, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; fellow of the American College of Surgeons; served during World War I; formerly councilor of the Second District of the Michigan State Medical Society; a trustee of the Hillsdale College and vice president of the First National Bank; affiliated with the Hillsdale Community Health Center, where he died September 26, aged 79, of heart disease.

Louis Guberman, Cincinnati; Universität Bern Medizinische Fakultät, Switzerland, 1935; member of the American Medical Association; died September 12, aged 39, of mitral stenosis.

Alfred Hand ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1892; professor emeritus of pediatrics at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; consulting physician to the Children's Hospital, Methodist Hospital and the Children's Hospital of the Mary J. Drexel Home; died in Montrose, Pa., September 1, aged 81, of myocardial failure.

Glenn Harold Heilman ⊕ Tarentum, Pa.; University of Pittsburgh School of Medicine, 1923; fellow of the American College of Surgeons; served during World War I; on the staff of the Allegheny Valley Hospital, where he died September 7, aged 53.

George Gottlieb Helbling, Denver; College of Physicians and Surgeons, Boston, 1928; died August 25, aged 66.

Solomon Hermann, Brooklyn; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany, 1898; served on the staff of the Maimonides Hospital; died September 6, aged 77, of coronary thrombosis.

Morris L. Hershman, Chicago; Chicago College of Medicine and Surgery, 1917; member of the American Medical Association; affiliated with the Garfield Park Community Hospital, where he died September 8, aged 60, of coronary thrombosis.

Norman William Heysett ⊕ Fort Wayne, Ind.; Indiana University School of Medicine, Indianapolis, 1929; member of the American College of Chest Physicians and American Trudeau Society; on the staff of the Irene Byron Sanatorium, where he died in September, aged 45, of pulmonary tuberculosis and hypertension.

Urius Himmelstein ⊕ New York; Cornell University Medical College, New York, 1910; specialist certified by the American Board of Pediatrics; affiliated with the Mount Sinai Hospital, Bronx Maternity Hospital and Woman's Hospital; died in Lowell, Mass., September 2, aged 63, of hypertensive cardiovascular disease.

Mary Holmes ⊕ Washington, D. C.; National University Medical Department, Washington, 1900; Woman's Medical College of Pennsylvania, Philadelphia, 1901; died September 7, aged 75, of coronary thrombosis.

William Henry Horton, Pineville, Mo.; Barnes Medical College, St. Louis, 1897; died August 17, aged 74, of myocarditis and lymphatic leukemia.

Henry Warner Johnson, Cambridge, N. Y.; Albany Medical College, 1891; died September 6, aged 82, of cerebral hemorrhage.

Samuel Harris Johnson ⊕ Pittsburgh; University of Pittsburgh School of Medicine, 1906; member of the Pittsburgh Academy of Medicine; affiliated with Western Pennsylvania Hospital; died in Atlantic City, N. J., September 8, aged 67 of coronary thrombosis.

Thomas Evans Jones ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1916; specialist certified by the American Board of Surgery; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, American Surgical Association and Eastern Surgical Association; a fellow, since 1941 governor and in 1947-1948 first vice president of the American College of Surgeons; served during World War I; chief of surgical staff, Cleveland Clinic Foundation; died September 29, aged 57, of coronary thrombosis.

William Shields Jones, Redmon, Ill.; Kentucky School of Medicine, Louisville, 1893; member of the American Medical Association; served as county coroner; for many years a minister of the Baptist Church; affiliated with the Paris (Ill.) Hospital; died in Paris October 10, aged 86.

Steven G. Julay, New York; Magyar Királyi Ferencz József Tudományegyetem Orvostudomanyi Kara, Szeged, Hungary, 1924; member of the American Medical Association and the American Psychiatric Association; affiliated with Mount Sinai Hospital; died in Rowayton, Conn., September 5, aged 52, of acute coronary thrombosis.

Edward Adolph Jurgelwicz, New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American Medical Association; affiliated with the Mercy Hospital-Soniat Memorial; died September 1, aged 77, of coronary thrombosis.

Verner Kennedy, Utica, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1913; served overseas during World War I; on the staff of the Utica Memorial Hospital; member of the Association of Military Surgeons of the United States; died September 27, aged 59, of coronary thrombosis.

Alfred Crosgrove Kingsley ⊕ Phoenix, Ariz.; University of Buffalo School of Medicine, 1901; member of the American Psychiatric Association; on the visiting staff of St. Joseph's and Good Samaritan hospitals; died September 5, aged 72, of metastatic carcinoma of the liver.

Charles J. Krehbiel, Dayton, Ohio; Pulte Medical College, Homeopathic, Cincinnati, 1897; also a druggist; died September 27, aged 78.

Francis Arthur La Breck ⊕ Eau Claire, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1908; on the staffs of the Luther and Sacred Heart hospitals; died September 5, aged 73, of coronary thrombosis.

James Davis Lewis ⊕ Scranton, Pa.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1909; past president and secretary of the Lackawanna County Medical Society; an officer overseas during World War I; served as health director of Lackawanna County and health officer of the city of Scranton; in 1945 appointed a member of the state board of health; died in the Scranton State Hospital September 2, aged 69, of coronary sclerosis.

Frank Pierce Malone, South Portland, Me.; Medical School of Maine, Portland, 1898; died September 5, aged 76, of coronary sclerosis and diabetes mellitus.

Louis Joseph Rudiger, Hobe Sound, Fla.; Tufts College Medical School, Boston, 1925; member of the Massachusetts Medical Society and the American Medical Association; died in the Martin County Hospital, Stuart, August 27, aged 56, of coronary occlusion, following an automobile accident.

John Francis Rudolph, Warren, Ohio; Western Reserve University Medical Department, Cleveland, 1903; past president of the Trumbull County Medical Society; served during World War I; for many years affiliated with the City Hospital, now known as the Trumbull Memorial Hospital, and St.

Joseph's Riverside Hospital; died in the Crile Hospital, Cleveland August 22, aged 77, of coronary thrombosis.

Robert L. St. Clair, Kansas City, Mo.; Missouri Medical College, St. Louis, 1898; member of the American Medical Association; on the staff of St. Joseph's Hospital; died September 2, aged 74, of bronchopneumonia and cerebral thrombosis.

William Jackson Sayles ⊕ Miami, Okla.; State University of Iowa College of Medicine, Iowa City, 1931; served during World War II; died in St. John's Hospital, Tulsa, August 26, aged 45, of poliomyelitis.

Charles Mathias Schoen ⊕ Milwaukee; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; died August 17, aged 78, of miliary tuberculosis.

Edward Elias Shibel, North Adams, Mass.; Georgetown University School of Medicine, Washington, D. C., 1934; member of the American Medical Association; formerly city physician; affiliated with the St. Luke's Hospital in Pittsfield and North Adams Hospital; died August 15, aged 45, of coronary thrombosis.

William S. Shouse, Kingston, Mo.; St. Louis College of Physicians and Surgeons, 1898; died in Liberty August 23, aged 81, of arteriosclerosis.

David Hermann Shulman, Boston; Medical College of Virginia, Richmond, 1912; died August 17, aged 61, of coronary disease.

Nathaniel Eldridge Silsley ⊕ Scottdale, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1894; secretary of the board of health of Scottdale; died August 2, aged 80, of cerebral hemorrhage.

Baxter Allen Smith ⊕ Crosby, Minn.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1905; served as vice president of the Minnesota State Medical Association; died August 17, aged 73, of bronchopneumonia and cerebral vascular accident.

Dudley Reeves Smith ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1923; assistant professor of clinical obstetrics and gynecology at his alma mater; specialist certified by the American Board of Obstetrics and Gynecology; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; served during World War II; affiliated with Barnes Hospital, St. Louis Maternity Hospital, De Paul Hospital, Deaconess Hospital and St. Luke's Hospital, where he died August 16, aged 51, of pneumonia.

Virginia Tenney Smith, Long Beach, Calif.; Boston University School of Medicine, 1888; died August 6, aged 89, of thrombotic encephalomalacia and arteriosclerosis.

Joseph Arthur Murphy Smurl, Haddon Heights, N. J.; Baltimore Medical College, 1896; died in the Cooper Hospital, Camden, August 23, aged 76, of Richter's hernia and coronary insufficiency.

Theodore Sokow ⊕ Kenosha, Wis.; Albert-Ludwig-Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1914; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; on the staffs of the Kenosha and St. Catherine's hospitals; died August 1, aged 59, of cerebral hemorrhage and coronary occlusion.

Earl A. Soule, East Moline, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1901; member of the American Medical Association; affiliated with the Moline Public Hospital and the Lutheran Hospital in Moline, where he died August 9, aged 72, of cerebral hemorrhage and arteriosclerosis.

Joseph C. Stahlman, Vandergrift, Pa.; Western Reserve University Medical Department, Cleveland, 1887; examining physician for the local draft board during World War I and II; member of the American Medical Association; died August 14, aged 90, of arteriosclerotic heart disease.

John Henry Steed, Dalton, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1902; member of the American Medical Association; on the staff of the Hamilton Memorial Hospital; died August 18, aged 73, of carcinoma of the larynx.

Audy Bryan Stephens ⊕ Seminole, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1928; died in the Valley View Hospital, Ada, August 15, aged 44, of cirrhosis of the liver and myocardial infarction.

John Le Roy Stevens, Colorado Springs, Colo.; Denver and Gross College of Medicine, 1908; member of the American Medical Association; died August 25, aged 78, of myocardial degeneration.

Evan Carson Stone, Minot, N. D.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1905; served in the state legislature; formerly coroner of Ward and McHenry counties; died in St. Joseph's Hospital August 4, aged 74, of malignancy of the kidney.

Theodore Le Roy Story ⊕ Southbridge, Mass.; Tufts College Medical School, Boston, 1917; member of the American Association of Industrial Physicians and Surgeons; for many years affiliated with the American Optical Company; died in St. Vincent's Hospital August 9, aged 61, of adenocarcinoma of the prostate with metastases.

Sterling Price Strother, Oklahoma City; Beaumont Hospital Medical College, St. Louis, 1901; served on the staff of Polyclinic Hospital; died in St. Anthony Hospital August 2, aged 82, of arteriosclerotic heart disease.

Boris Ury ⊕ Beverly Hills, Calif.; University of Illinois College of Medicine, Chicago, 1940; member of the Illinois State Medical Society; formerly on the faculty of his alma mater; died in Santa Monica August 26, aged 45, of injuries received when he fell from the sixth floor.

Earl R. Van Amburgh, Pine Bush, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1915; member of the American Medical Association; past president of the Orange County Medical Society; school physician; for many years health officer; on the staff of St. Luke's Hospital in Newburgh; died August 7, aged 58, of carcinoma.

Frank E. Wagner, Baltimore; College of Physicians and Surgeons, Baltimore, 1894; veteran of the Spanish-American War; died in the U. S. Marine Hospital July 24, aged 78, of carcinoma of the prostate with metastasis to the liver and arteriosclerosis.

Julia Washburn, Lexington, Ky.; Cleveland Medical College, Homeopathic, 1891; died August 14, aged 88.

Talmage Bryan Weatherly, Richmond, Va.; University College of Medicine, Richmond, 1912; member of the American Medical Association; on the staff of the Retreat for the Sick; died September 4, aged 61, of uremia and renal tuberculosis.

George T. Webb ⊕ Brooklyn; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Germany, 1911; fellow of the American College of Surgeons; on the staff of the Coney Island Hospital; died August 20, aged 61, of coronary thrombosis.

Stephen Albro Welch ⊕ Providence, R. I.; Harvard Medical School, Boston, 1884; served as president of the Rhode Island Medical Society; on the staff of the Rhode Island Hospital; died September 7, aged 91, of carcinoma.

Jonathan Godfrey Wells ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1900; formerly on the faculty of the New York Post-Graduate Medical School and Hospital, Columbia University; served on the Selective Service Board during World War I; senior examining physician for the Mutual Life Insurance Company for many years; three times elected president of the City Hospital Alumni Association; died September 2, aged 72, of coronary disease.

Edwin Jay Wilkinson, Toledo, Ohio; Toledo Medical College, 1902; on the staff of St. Vincent's Hospital, where he died August 29, aged 70, of coronary thrombosis.

Robert Crawford Woodard ⊕ Miami, Fla.; University of Georgia Medical Department, Augusta, 1899; member of the American College of Hospital Administrators; served in the Georgia state legislature; formerly superintendent of the James M. Jackson Memorial Hospital, where he died August 31, aged 81, of coronary sclerosis and carcinoma of the bladder.

Norman Lee Woodry ⊕ Detroit; Detroit College of Medicine, 1913; specialist certified by the American Board of Otolaryngology; fellow of the American Academy of Ophthalmology and Otolaryngology; affiliated with Harper, Mount Carmel Mercy and Florence Crittenden hospitals; died August 6, aged 59, of coronary thrombosis.

Cyrus Edward Yeagle, Toledo, Ohio; Toledo Medical College, 1903; died September 4, aged 77, of melanoma of the face.

John Glenn Young, Pontiac, Ill.; Barnes Medical College, St. Louis, 1906; member of the American Medical Association; served during World War I; affiliated with Mennonite Hospital in Bloomington and St. James Hospital; formerly physician for the state reformatory; died September 5, aged 70, of myocarditis and arteriosclerosis.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Sept. 30, 1949.

International Antituberculosis Union

A meeting of the Council of the International Antituberculosis Union was held at the secretariat of the union, 66 Boulevard Saint-Michel, July 11-13, 1949. Delegates of 24 nations were present; Dr. J. B. MacDougall represented the World Health Organization. The administrative sessions were devoted chiefly to the revision of the union's constitution; a modified text of the by-laws will be submitted to the General Assembly meeting in 1950 in preparation for the eleventh conference of the union, which will be held in Copenhagen Sept. 5-10, 1950. The secretary general, Prof. Etienne Bernard, announced the admission of Haiti, Iran and Turkey, bringing to 45 the number of countries belonging to the union. Invitations to summon a coming international conference in their respective countries were addressed to the union by the representatives of the United States, Brazil and India. The following subjects were selected for the agenda of the conference: tubercle bacilli and chemotherapeutic agents, their sensitivity, resistance and dependence (first report by Dr. Esmond Long); indications for collapse therapy and antibiotics in the treatment of pulmonary tuberculosis (opening report by Messrs. E. Rist and Etienne Bernard, secretary general of the International Antituberculosis Union), and emergency order of the measures to be adopted in countries "where the tuberculosis campaign has just started" (opening report by M. Arlindo de Assis.

At the first scientific session of the Council Dr. Esmond Long read a paper on "Resistance of Mycobacterium Tuberculosis to Streptomycin." The second scientific session was devoted to the discussion of surgical exeresis in the treatment of pulmonary tuberculosis. Reports were read by Prof. Price Thomas, London, and by professors Santy and Bérard, Lyons. Prof. Price Thomas summarized his conclusions: "Resection of the lung for pulmonary tuberculosis offers the best prospect of cure in the type of case which will not react favorably to any of the standard methods of relaxation therapy. Patients with disease which can satisfactorily be treated by thoracoplasty should continue to be so treated until it is established that resection offers a better prospect at a smaller risk. The matter of deformity should not enter too seriously into the discussion." Messrs. de Winter, Odelberg, Maurer and Lebrigant took part in the ensuing discussion.

Treatment of Psoriasis with Placental Extracts

Prof. J. Gate, Drs. R. Vachon, R. Moindrot and J. Cotte (Lyons) tried treating psoriasis with aqueous extracts of placenta, gathered immediately after delivery and stored in a refrigerator for about eight days. The treatment consists of daily intramuscular injections given in thirty to forty day courses. At a meeting of the French Society of Dermatology and Syphilography, they reported their first results in 28 cases; in 3 cases all signs were eliminated without any other external treatment. In one of these 3 cases the disease had been resistant to all classic treatment for eight years. Of the 2 remaining patients, who were experiencing their first outbreak, one had not responded to arsenical therapy. The patients had been free from psoriasis four to six months. Considerable improvement had been noted in 3 cases of long-standing disease (80 to 90 per cent). Eleven patients showed some improvement. The treatment is well tolerated except that (1) in 1 case a transient pruriginous, eruptive reaction, resembling herpes gestationis, was noted, (2) several patients experienced general fatigue, sleepiness and sometimes an increase of appetite, which may be attributed to the hypoglycemia sometimes found in tissular therapy, and (3) 1 woman experienced a temporary cessation of her menses. The results may be better with improvement of the method.

Placental Implantations in Ophthalmology

Belz, at a recent meeting of the Lyons Society of Ophthalmology, reported a case of bilateral neuritis, of two years' duration, with vision of 1/20, enormous scotomas, decoloration of the temporal half-papillae and disorders of retinal adaptation. Alcoholism and tabacosis are responsible for this neuritis. The patient had failed to respond to all other types of treatment. After stopping the use of tobacco and alcohol, Belz performed a subcutaneous implantation of a fragment of placenta and, fourteen days later, noted an appreciable result: improved vision of the right eye to 8/10 and of the left eye to 7/10. A second implantation of placenta was performed three weeks later, resulting in 8/10 vision in both eyes. After a series of injections of placental extracts and the administration of vitamin B, there was greater improvement and the patient was able to resume his work as accountant. Mrs. Matavulj recently reported to the Paris Society of Ophthalmology a case of uveal tuberculosis rapidly improved, in three days, after a subcutaneous implantation of placenta. Paufique and Hugonnier reported to the Lyons Society of Ophthalmology a case of detachment of the retina; operation had been unsuccessful, but there had been spectacular improvement (rapid resetting) after a subcutaneous placental implantation followed by slight diathermocoagulation. Although all previous therapies, including sympathicolytic measures, had failed, Mayer and Kanitakis succeeded in improving arteritis of the inferior limbs with reappearance of the oscillations (noted with the Pachon sphygmograph) and in curing obstinate painful ulcerations by means of two successive placental grafts (reported to the French Society of Dermatology and Syphilography on July 7, 1949).

1948 Cancer Mortality Rate

Data recently published by the National Institute of Statistics and Economic Studies give the following figures on deaths due to cancer for the year 1948: There were 72,965 deaths, 35,480 male and 37,485 female. Of 100 deaths from a known cause, 16 per cent were attributable to cancer. In 1946, 13.3 per cent of all deaths were due to cancer, and in 1947, 13.8 per cent.

ITALY

(From Our Regular Correspondent)

Florence, Sept. 30, 1949.

In Defense of Public Health

Prof. Giuseppe Alberti (senator) delivered an important speech in the Senate in defense of public health; he called attention to the importance of the office of the High Commissioner for Hygiene and Public Health and particularly of the High Institute of Health. The office of public health is well administered if general benefit results in the field of social medicine. According to the speaker, differentiation between general and occupational diseases would result in oversimplification of public health administration. He did not believe that the office of the High Commissioner could be abolished but felt that a Ministry of Public Health should be established to help care for all the needs in the social health field, prophylactic, supportive and therapeutic. In a radical reorganization of public health departments, the problems dealing with the protection of mothers and infants should be given particular consideration. With respect to malignant disease, the speaker emphasized that the number of patients with malignant tumors is increasing, while the machinery for combating malignant disease is still insufficient. One should therefore encourage those institutions which do scientific research in this field and consider the important social aspects with respect to work and occupations which may produce malignant disease.

Medical Society Meeting

At the Neapolitan Society of Medicine, Cacciapuoti and Simonelli discussed the intravenous use of salicylates in the treatment of sequelae of encephalitis.

The use of salicylates in lethargic encephalitis and its sequelae is not new, and the purpose is to neutralize the alkalosis, the vagotonia and the hyperdefensive condition of the pyramidal tonus.

The insignificant results obtained with the intravenous use of 10 per cent sodium salicylate for pain from atrophic arthritis induced the employment of doses of 20 and 30 cc. at gradually increased intervals. The results were surprising: The voice returned, the spoken words could be understood and the extremities were extended progressively until an upright position could be assumed and the patient could walk by himself. Only the tremor was not much attenuated.

A phenomenon worthy of consideration is the nearly complete absence of the diaphoretic reaction to the use of sodium salicylate intravenously even when large doses are given.

Cacciapuoti and Santanelli reported 2 cases of cerebral malaria with rapid recovery resulting from intramuscular administration of acetylcholine followed by intravenous administration of quinine solution in twice the usual concentration. At the International Congress of Neurologists in London in 1935 a speaker reported a case of hemiplegia of malarial origin which resisted all chemotherapy, but subsided rapidly after the intramuscular administration of acetylcholine followed by intravenous administration of quinine in solution of twice the usual concentration.

Honors Conferred on Professor Giordano

A ceremony took place in the medical library of the School of Saint Mark in Venice to celebrate the eighty-fifth birthday of Prof. David Giordano. The famous surgeon and journalist is at present chief emeritus of the Civilian Hospital of Venice. His admirable contributions as a scientist, historian of medicine and model citizen were praised.

DENMARK

(From Our Regular Correspondent)

COPENHAGEN, Oct. 7, 1949.

Should the General Practitioner Vaccinate with BCG?

A letter from a general practitioner in a recent number of the journal of the Danish Medical Association suggests that tuberculosis dispensaries and the specialists in charge of them are trying to control BCG vaccination to the exclusion of general practitioners. Why, the correspondent asks, should children be sent long distances at the expense of their parents to tuberculosis dispensaries where they may have to come into contact with persons with tuberculosis and where they will be vaccinated not by a doctor but by a nurse? In reply it was pointed out that such vaccination requires considerable skill and that practiced vaccinators have the fewest complications. Furthermore, the tuberculosis dispensaries can undertake a radiologic examination before vaccination and can carry out and check the results of tuberculin testing with a background of considerable experience. Besides, most general practitioners do not have a stock of fresh BCG. A compromise has been suggested: In the future BCG vaccination should be largely in the hands of traveling teams of vaccinators, as is already the case in many parts of Europe.

Another question still being debated is the extension of BCG vaccination to the first year of life. More than a million Danes have already underone BCG vaccination, but hitherto the BCG vaccination of the newborn and of infants has to some extent been limited to tuberculous environments. Now it is being urged that even in nontuberculous environments it is safest to vaccinate with BCG at the earliest date possible. Dr. Povl Hertz recently published a study of 537 infants whose ages ranged up to 1 year, who lived in an environment which in practically every case was or had been tuberculous, and who were vaccinated with BCG. Their further development was normal, and none of the 6 deaths among them was due to tuberculosis. It has been argued that the newborn are poor antibody producers, but Hertz found that only 2 of the 64 newborn infants he vaccinated had to be vaccinated again to become tuberculin positive. It is, however, generally agreed that the vaccination of infants presents greater difficulties than that of older children.

Centralization of Narcotic Poisoning Cases

As of Oct. 1, 1949, every Copenhagen patient with narcotic poisoning requiring hospital treatment is to be sent to the psychiatric department of the Bispebjerg Hospital, instead of to the nearest general hospital. All ambulance and emergency medical services and all doctors in the city have been given instructions to this effect. These patients are kept in the psychiatric department as long as they are unconscious. When they recover consciousness, they are transferred to the general psychiatric part of this department if psychiatric after-treatment is desirable.

This arrangement reflects the change which has taken place in the treatment of poisoning by narcotics in general and the barbiturates in particular. It is not an exaggeration to say that only a short time ago any intern in any general hospital was considered fully qualified and fully equipped for meeting such emergencies. Now it is realized that the ultimate fate of the patient, life or death, often depends on the mastery of the modern technic of the treatment in such cases and on the equipment available—equipment which is so costly that some hospitals cannot afford it. In March 1949, Dr. Aage Kirkegaard published an account of the modern treatment of acute poisoning with barbiturates in the journal of the Danish Medical Association (*Ugeskrift for Laeger*). He pointed out that among recent advances are the introduction of analeptics of the "metrazol" group, the useful sulfonamide drugs for the prevention of pneumonia, aspiration and irrigation of the stomach with charcoal and magnesium sulfate, blood transfusions and the timely prevention of secondary circulation shock. The respirations, pulse rate, temperature, blood pressure and hemoglobin percentage should be observed at four hour intervals and treatment instituted as needed. The chemical composition of the plasma should be controlled daily, and, if acute edema of the lungs threatens, appropriate treatment should be given promptly. All these measures and others require costly apparatus and skilled personnel.

August Krogh

When the physiologist and Nobel prize winner, August Krogh, died in Copenhagen this autumn, his international reputation gave rise to many detailed obituary notices throughout the world. However, an example of the importance of the work of this great scientist lies in the part now taken by Denmark in the natural sciences, particularly physiology. Krogh was born in 1874, studied zoology and graduated in 1899 from the University of Copenhagen. Before his graduation he worked as a student in Christian Bohr's physiologic laboratory. A few years later he attained the rank of professor. In 1908 he and his wife spent some time in Greenland studying the diet and metabolism of Eskimos, living almost exclusively on fish, fat and seal meat. By 1910 he had concluded that the passage of gases between the blood and the air in the lungs is a process of simple gas diffusion. Subsequently, he did much work on the regulation of breathing and on the physiology of muscular exercise. Some time later his attention was focused on the capillary circulation and on the oxygen consumption of muscles during severe exercise. A full account of this and related research was given in his Silliman lectures delivered at Yale University.

The award of a Nobel prize in 1920 introduced Krogh to thousands who had not hitherto heard his name. In his later years he did much research on the osmotic regulation in aquatic animals. He retired from his university chair in 1945, but he continued working till he died. The gifts which made Krogh great were a capacity for critical reasoning, a vivid but disciplined imagination and a technical dexterity which enabled him to devise effective but simple apparatus. In spite of his natural shyness, he gained a following, a school of enthusiasts who are now working in the Krogh tradition.

Correspondence

DIABETES AND ITS TREATMENT

To the Editor:—I wish to call your attention to the content of the book notice published in The Journal of August 27 on my book "Diabetes and Its Treatment." The review of the medical matter begins by saying that diabetic acidosis and coma and pregnancy are discussed thoroughly and in the following sentence says that the treatment of acidosis is given in a decidedly empiric fashion. This is a contradiction in itself and a misstatement of fact. Chapter VIII, pages 165 to 188, is devoted to the treatment of acidosis and coma, beginning with the origin of our ideas concerning coma, and a step by step description of the evolution of knowledge concerning its treatment. Credit is given to the workers who have laid the foundation for present day treatment. This has not been done as completely or as carefully in other books on the treatment of diabetes. The treatment as planned offers a complete guide for the handling of these cases and the treatment as outlined is not empiric. Each step is guided by laboratory controls and my mortality rate of 2:2 per cent (p. 165) shows the results obtained by this method of treatment.

The reviewer comments on "the thorough study of nutrition and growth in childhood" and then says that the chapter on the use of insulin in childhood seems inadequate in view of its importance. In principle, insulin in the child acts as it does in the adult, and, if one were to attempt detailed description of insulin behavior in individual children, volumes could be written that would add nothing toward better understanding or better treatment. In a book for the practitioner of medicine, complex details lead only to confusion of the doctor and failure in treatment. And, what have all the trick formulas and insulin combinations, about which we read so much, yielded to patient and doctor? The main discussion of insulin and its use is covered by chapters XV and XVI.

Concerning the comment on the inadequate discussion of the biochemistry and physiology of diabetes, this subject was included in the original draft of the book but was eliminated because this is a book for the adult practitioner of medicine who knows where to find such information at its original sources.

The reviewer said that some of the premises, pertaining to the occurrence of diabetes in China and elsewhere, are not sound. Is it finally settled, that the incidence of diabetes in Arizona is representative of diabetes everywhere else? This is a thin argument in the face of all that is known of the history of diabetes, which is more prevalent in certain areas and among certain peoples whose way of life and geographic location differ. I accept the experiences of pathologists and clinicians who have studied diabetes in foreign lands and have noted this striking difference.

The next obverse comment is "The discussion of endocrine relationships in diabetes is not well organized and is unconvincing." I wish the reviewer had stated who does understand the relationship between the endocrines and diabetes. There is plenty of speculation, but who has the facts? It is my privilege to sit in with seventeen research workers and world authorities in metabolism and endocrinology, and diabetes is a major problem with us. If any of these men has unquestioned evidence on the true relationship, it has not been revealed.

The reviewer's statement that "the author's instructions that insulin should be omitted or reduced in illness and prior to operation seems dangerous" is a misrepresentation of fact. I have cited cases of death following the omission of insulin during infectious disease (p. 303). I have stated clearly that the patient's diet should be reduced and the previous full insulin dosage must be continued to maintain a normal blood sugar level (p. 103).

I have introduced page size figures and graphs (pp. 100-101) showing the increased need of insulin during infections and fevers (p. 303), and yet the reviewer implies that I ignore hyperglycemia in diabetes. I have nowhere advised tolerance of higher than normal blood sugar levels (120 mg.) except in the aged and in arteriosclerotic persons in whom insulin reactions develop when high levels of blood sugar occur. I have seen coronary occlusions in such patients after too much insulin, which does not indicate that a high blood sugar in diabetes is to be advocated.

On the day of operation, when the patient is without food, dextrose with insulin is given intravenously—at the end of the operation and throughout the rest of the day (pp. 158-164). In this way postoperative insulin shock is prevented.

The reviewer takes exception to the arbitrary prescription of 1 unit of insulin for 2 Gm. of carbohydrate. I refer the reviewer to Joslin's book (Joslin, E.: Diabetes, ed. 8, Philadelphia, Lea & Febiger, 1948, pp. 375-376).

The reviewer states that the value of insulin with intermediate action is not discussed. Seventy-two per cent of our patients are treated with mixtures of protamine zinc and clear insulin (pp. 288-294). If the reviewer had in mind such insulin as NP 50, this preparation is still in its clinical observation stage, is not available to the practitioner, and it may even be supplanted by another preparation before long. In our hands, NP 50 insulin has not accomplished more than the insulin mixtures we have been using. Globin and other insulins are compared and discussed on pages 290 to 293.

This review refers to my book as a useful encyclopedia of empiric information. What other species of information is required to relay simple and realistic facts to the practitioner of medicine? The criticisms in this review cannot be substantiated by the printed words in the book.

It is a reviewer's privilege to state his impressions, but he is morally obligated to be correct in his quotations and interpretation of the content in that book. This review has failed completely to meet such requirements.

Joseph H. Barach, M.D., Pittsburgh.

Council on Medical Education and Hospitals

APPOINT ASSOCIATE DIRECTOR OF SURVEY OF MEDICAL EDUCATION

The Committee for the Survey of Medical Education, sponsored jointly by the Council on Medical Education and Hospitals and the Association of American Medical Colleges, has announced the appointment of Dr. Robert C. Berson to the full time staff of the survey. Dr. Berson will be associate director of the survey and will assist Dr. John E. Deitrick, the director in the survey of medical schools that was initiated this fall. Dr. Berson is assistant dean and assistant professor of medicine at the University of Illinois College of Medicine and assistant medical director, Research and Educational Hospitals. He has been granted a leave of absence for the duration of the survey. Dr. Berson is a graduate of Vanderbilt University School of Medicine and a specialist certified by the American Board of Internal Medicine.

HOSPITAL FACILITIES FOR THE TREATMENT OF POLIOMYELITIS

Report of Survey by Council on Medical Education and Hospitals

In July 1947 the National Foundation for Infantile Paralysis requested the assistance of the American Medical Association in obtaining information on the availability of hospital facilities for the treatment of poliomyelitis. In accordance with this request the following questions submitted by the National Foundation were included in the annual survey of hospitals conducted by the Council on Medical Education and Hospitals at the end of 1947:

1. Do you admit infantile paralysis patients?
2. If so, in what year did you start admitting them?

Of the total of 6,276 hospitals included in the Council's survey, 1,243 reported that infantile paralysis patients were accepted for treatment. These include 1,039 general hospitals, 63 orthopedic hospitals, 34 isolation units, 33 hospital departments of institutions, 26 psychiatric divisions and 48 other hospitals, as illustrated in table 1.

TABLE 1.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Type of Service)

Type of Service	Number of Hospitals
General	1,039
Orthopedic	63
Isolation	34
Institutional	33
Psychiatric	26
Children	19
Tuberculosis	11
Convalescent	11
Chronic	5
Industrial	2
Total	1,243

On the basis of control, 181 are listed as federal hospitals, 294 under state, city or county control, 688 as church or other nonprofit associations and 80 as proprietary hospitals. A further subdivision of these groups is shown in table 2.

TABLE 2.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Control)

Control	Number of Hospitals	Control	Number of Hospitals
U. S. Army	54	City	118
U. S. Navy	27	City-County	21
U. S. P. H. Service	17	Church	256
Veterans Administration	61	Nonprofit Association	432
Indian Affairs	18	Individual	35
Other federal	4	Partnership	14
State	57	Corporation	31
County	98		
Total			1,243

Hospital facilities for the treatment of poliomyelitis are available in all states and the District of Columbia, as shown in table 3. The highest numbers were reported in New York, Texas, Illinois, Pennsylvania and California, where the hospitals admitting infantile paralysis patients totaled 146, 76, 70, 62 and

TABLE 3.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by States)

State	Total Hospitals	Hospitals Admitting Poliomyelitis Patients
Alabama	103	22
Arizona	56	16
Arkansas	66	11
California	378	59
Colorado	96	16
Connecticut	78	11
Delaware	16	4
District of Columbia	29	5
Florida	120	32
Georgia	122	22
Idaho	41	10
Illinois	317	70
Indiana	136	25
Iowa	133	25
Kansas	120	36
Kentucky	99	17
Louisiana	87	9
Maine	61	12
Maryland	82	11
Massachusetts	225	46
Michigan	255	46
Minnesota	206	36
Mississippi	92	6
Missouri	141	32
Montana	52	15
Nebraska	99	13
Nevada	14	4
New Hampshire	39	11
New Jersey	158	28
New Mexico	48	8
New York	523	146
North Carolina	164	20
North Dakota	46	22
Ohio	238	38
Oklahoma	117	18
Oregon	74	18
Pennsylvania	345	62
Rhode Island	23	4
South Carolina	67	15
South Dakota	52	11
Tennessee	125	18
Texas	397	76
Utah	33	5
Vermont	30	13
Virginia	125	17
Washington	117	31
West Virginia	83	14
Wisconsin	219	46
Wyoming	29	11
Total	6,276	1,243

59 respectively. Further, it may be shown that the number of participating hospitals varied from 31 to 46 in nine states, from 10 to 28 in twenty-seven states and from 4 to 9 in seven states and the District of Columbia. For comparative purposes the number of hospitals in each state is shown in table 3 as well as the number of institutions admitting poliomyelitis patients.

A total of 893 hospitals indicated the year in which infantile paralysis patients were first accepted for hospital treatment. Of this number 275 had established facilities for poliomyelitis prior to 1930, 62 hospitals received their first infantile paralysis patient in 1930-1934, 70 in 1935-1939, 217 in 1940-1944 and 269 in the period 1945-1947. This increase in recent years in the utilization of hospital facilities for poliomyelitis may also be noted in tables 4 and 5, where the aforementioned data are classified further in accordance with the type of hospital service and control.

Table 4.—*Hospitals Admitting Poliomyclitis Patients*

(Classified by Type of Service and Year in Which Infantile Paralysis Patients Were First Admitted)

	Number of Hospitals Admitting Poliomyelitis Patients						
Type of Service	Before 1930	1931-1934	1935-1939	1940-1944	1945-1947	Not Stated	Total Hospitals
General	184	50	56	202	257	290	1,039
Orthopedic	39	3	7	5	1	8	63
Isolation	21	2	3	1	2	5	31
Institutional	4	4	2	4	..	19	33
Psychiatric	3	..	..	2	5	16	26
Children	12	1	1	..	..	5	19
Tuberculosis	3	1	1	..	2	4	11
Convalescent	4	1	..	3	2	1	11
Chronic	4	..	..	..	..	1	5
Industrial	1	..	..	..	..	1	2
Total	275	62	70	217	269	350	1,243

Table 5.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Control and Year in Which Infantile Paralysis Patients Were First Admitted)

	Number of Hospitals Admitting Poliomyelitis Patients						
Control	Before 1930	1931-1934	1935-1939	1940-1944	1945-1947	Not Stated	Total Hospitals
U. S. Army	11	2	1	17	5	18	54
U. S. Navy	5	1	1	12	3	5	27
U. S. P. H. Service	3	1	1	2	..	10	17
Veterans Admin.	3	3	2	7	28	18	61
Indian	2	2	4	1	3	6	18
Other federal	..	1	..	1	2	..	4
State	14	4	7	7	2	23	57
County	27	5	12	10	16	28	98
City	40	6	6	13	25	28	118
City-County	4	..	1	6	3	7	21
Church	33	9	7	61	78	68	256
Nonprofit Assn.	126	22	21	66	85	112	432
Individual	5	2	1	8	11	8	35
Partnership	..	2	2	2	1	7	14
Corporation	2	2	4	4	7	12	31
Total	275	62	70	217	269	350	1,243

Seven general hospitals in Alaska reported the admission of poliomyelitis patients, four in the Canal Zone, one in Guam, fifteen in Hawaii, seven in Puerto Rico and two in the Virgin Islands. The information submitted by individual hospitals has been analyzed, and a complete list of the hospitals reporting facilities for poliomyelitis has been forwarded to the National Foundation for Infantile Paralysis. This list contains the name and location of each hospital, the type of service offered, ownership or control, general information on bed capacity, annual admissions and average daily census as well as the year in which infantile paralysis patients were first admitted for hospital care. Copies of all material, including lists and tabular data prepared in connection with this survey, are on file in the office of the Council on Medical Education and Hospitals, where the original reports submitted by individual hospitals are also available.

NEW HOSPITALS REGISTERED

The following hospitals were registered by the Council on Medical Education and Hospitals of the American Medical Association at its meeting in Chicago, Oct. 23, 1949:

Tippins Hospital, Hartford, Ala.
Hartselle Hospital, Hartselle, Ala.
Benson Hospital, Benson, Ariz.
Holbrook Municipal Hospital, Holbrook, Ariz.
Gray-Barker Hospital, Jacksonville, Ark.
San Joaquin Hospital, Bakersfield, Calif.
Exeter Memorial Hospital, Exeter, Calif.
Kaiser Fontana Hospital, Fontana, Calif.
Bellevue Nursing Home, Gardena, Calif.
Imperial Valley Tuberculosis Sanatorium, Holtville, Calif.
Mojave Hospital, Mojave, Calif.
Permanente Hospital, Vallejo, Calif.
General Rose Memorial Hospital, Denver, Colo.
St. Joseph Hospital, Florence, Colo.
Veterans Administration Hospital, Grand Junction, Colo.
Governor Bacon Health Center, Delaware City, Del.
Belle Glade Memorial Hospital, Belle Glade, Fla.
Doctors' Hospital, Coral Gables, Fla.
Walton County Hospital, DeFuniak Springs, Fla.
Villa Rose, DeSoto City, Fla.
Theresa Holland Hospital, Leesburg, Fla.
Dr. Shoulson's Home for Convalescents, Miami Beach, Fla.
Our Lady of Angels Hospital, Pensacola, Fla.
Peachtree Sanitarium, Atlanta, Ga.
Thompson-Johnson Hospital, Elberton, Ga.
Minnie G. Boswell Memorial Hospital, Greenboro, Ga.
Dr. F. H. Sams Hospital, Reynolds, Ga.
University of Idaho Infirmary, Moscow, Idaho
Stibnite Hospital, Stibnite, Idaho
Mercer County Hospital, Aledo, Ill.
Herrick House, Bartlett, Ill.
Brown's Convalescent Home, Chicago, Ill.
Willow Bark Hospital, Danvers, Ill.
Dr. Weirick Rest Home, Elgin, Ill.
Edward Greer Hospital, Robinson, Ill.
Wabash Valley Sanitarium, Lafayette, Ind.
Coffeyville Memorial Hospital, Coffeyville, Kan.
Lindsborg Community Hospital, Lindsborg, Kan.
St. John Veterans Memorial Hospital, St. John, Kan.
Scott County Hospital, Scott City, Kan.
Jackson Hospital, Clinton, Ky.
Dyer Hospital, Kuttawa, Ky.
West Liberty Hospital, West Liberty, Ky.
Palms Hospital, Abbeyville, La.
Desporte Clinic Hospital, Bogalusa, La.
Wiginton Infirmary, Hammond, La.
Jena Hospital, Jena, La.
War Memorial Hospital, Leesville, La.
Napoleonville Hospital, Napoleonville, La.
Martin Clinic and Hospital, Winnfield, La.
Winnfield General Hospital, Winnfield, La.
Rogers Clinic and Hospital, Winnsboro, La.
Jenkins Memorial Hospital, Baltimore, Md.
Valleyhead Hospital, Concord, Mass.
Hudson Hospital, Hudson, Mass.
Kith Haven, Flint, Mich.
Del Vista Sanitarium, Plainwell, Mich.
Community Hospital, Watervliet, Mich.
Birches Sanitarium, Duluth, Minn.
Pool's Clinic Hospital, Cary, Miss.
Sallie Harris Clinic Hospital, Jackson, Miss.
Taborian Hospital, Mound Bayou, Miss.
Evans Hospital, Water Valley, Miss.
Spence Hospital and Clinic, Kennett, Mo.
Lockwood Memorial Hospital, Lockwood, Mo.
Marian Hospital, St. Louis, Mo.
Kelling Clinic and Hospital, Waverly, Mo.
St. Francis Hospital, Osceola, Neb.
St. John Hospital, Spalding, Neb.
Kate Macy Ladd Convalescent Home, Far Hills, N. J.
Middlesex County Hospital for Infantile Paralysis, New Brunswick, N. J.
Gerald D. Champion Memorial Hospital, Alamogordo, N. Mex.
Rehoboth Mission Hospital, Rehoboth, N. Mex.
Chatham Community Hospital and Sanitarium, Chatham, N. Y.
Wee Haven, Haverstraw, N. Y.
Conklin Sanitarium, Ithaca, N. Y.
Mount Morris Park Hospital, New York City, N. Y.
Wieting-Johnson Memorial Hospital, Syracuse, N. Y.
Roanoke Chowan Hospital, Ahoskie, N. C.
Williams Clinic Hospital, Spruce Pine, N. C.
Mary B. Talbert Home and Hospital, Cleveland, Ohio
Haines Maternity Hospital, Jamestown, Ohio
Edmond Hospital, Edmond, Okla.
Baxter Hospital, Shawnee, Okla.
Retreat Hospital, Portland, Ore.
Veterans Administration Hospital, Providence, R. I.
United States Naval Hospital, Beaufort, S. C.
McClaren Medical Shelter, Greenville, S. C.
Community Memorial Hospital, Burke, S. D.
St. Anthony's Hospital, Martin, S. D.
Veterans Administration Center, Sioux Falls, S. D.
Bledsoe Memorial Hospital, Pikesville, Tenn.
Underwood Clinic Hospital-Amarillo Preventorium, Amarillo, Texas
Douglas Hospital Clinic, Beaumont, Texas
Boerne Hospital, Boerne, Texas
Allen Memorial Hospital, Commerce, Texas
Myers Hospital, Cotulla, Texas
Del Rio Hospital, Del Rio, Texas.
Eden Clinic Hospital, Eden, Texas
Peoples [illegible]
Lee Me[illegible], Texas
North Side Hospital, Houston, Texas
Veterans Administration Hospital, Houston, Texas
Cherokee Nursing Home, Jacksonville, Texas
Sid Peterson Memorial Hospital, Kerrville, Texas
Stanifer Hospital, Lamesa, Texas
Mason Memorial Hospital, Mason, Texas
McCulloch-Concho Cooperative Hospital, Melvin, Texas
Newton County Memorial Hospital, Newton, Texas
Medical Center Hospital, Pasadena, Texas
Hopkins County Memorial Hospital, Sulphur Springs, Texas
F. E. Seale Clinic Hospital, Tahoka, Texas
Dickey Clinic Hospital, Taylor, Texas
McCalip-Ivy Hospital, Weslaco, Texas
Sampete Latter Day Saints Hospital, Mount Pleasant, Utah
White Cross Hospital, Salem, Va.
Asotin County Hospital, Clarkston, Wash.
New Riverview Hospital and Clinic, Raymond, Wash.
Memorial General Hospital, Elkins, W. Va.
Guthrie Hospital, Huntington, W. Va.
Doctors Hospital, Milwaukee, Wis.
Memorial Hospital, Powell, Wyo.
Goshen County Memorial Hospital, Torrington, Wyo.
[illegible] Hospital, Hilo, Hawaii
[illegible] waii
[illegible] waii
[illegible] stitute
[illegible] San-
[illegible]

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners. *Part III.* Boston, Chicago and New York, January. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Written.* Various locations. July 21. *Oral.* Philadelphia, April 23-27, Chicago, October 8-12. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22.

American Board of Internal Medicine: *Oral.* Chicago, Feb. 8-10. Boston, April 13-15. San Francisco, June 21-23. The oral examinations in the subspecialties will be held at the same time and places. Final date for filing applications for all examinations is Jan. 1. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven, Conn.

American Board of Obstetrics and Gynecology, Inc. •*Written and Reviews of Case Histories. Part I.* Various Centers. Feb. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Urology: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Alaska: Juneau, March 7. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Colorado: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

Delaware: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

Florida: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Guam: *Endorsement.* Agana, last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Hawaii: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

Idaho: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Kentucky: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 620 South Third Street, Louisville 2.

Louisiana: New Orleans, Dec. 8-10. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans 12.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

New Hampshire: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

North Carolina: *Endorsement.* Raleigh, Jan. 23. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

North Dakota: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: * *Examination.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

Pennsylvania: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

Puerto Rico: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

South Dakota: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

Utah. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Dec. 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

Oklahoma: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

Oregon: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

Washington: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Emergency as Justification for Operation.—The plaintiffs, husband and wife, sued for damages for a technical assault arising out of an alleged unauthorized surgical operation performed by the defendant-physician. From a judgment in favor of the defendant, and from an order denying the plaintiffs' motion for a new trial, the plaintiffs appealed to the district court of appeal, second district, division 2, California.

For several months prior to the operation the plaintiff-wife, who will be referred to as plaintiff, had been treated by the defendant-physician for continued vaginal bleeding. In January 1946 the defendant made a pelvic examination and found what appeared to be a small fibroid tumor on the anterior surface of the uterus. In succeeding months other examinations revealed that the mass in the right ovarian region, at first about half as large as a walnut, to have grown to the size of a lemon. During July the plaintiff consulted physicians in Santa Barbara. One diagnosed her symptom as an ovarian cyst and the other as a growth on the uterus. Both recommended immediate operation. The plaintiff told the defendant of these examinations and recommendations. On Aug. 1, 1946, the plaintiff was again examined by the defendant, and he also advised operation, to which the plaintiff, after consulting with her husband, consented. The plaintiff testified that she consented only to the removal of her right ovary and nothing more. The defendant and his nurse testified that he told the plaintiff it might be necessary to remove the right ovary or the uterus, depending on the condition found when her abdomen had been opened, and that he promised not to remove both ovaries, which was the only limitation requested by the plaintiff.

On August 4 the plaintiff went to the hospital, where she signed a consent to "whatever anesthetic and operation which may be decided to be necessary or advisable." A registered nurse signed as a witness. The plaintiff contended that she had no recollection of ever having signed a release and that she did not sign it before she had taken a sedative. The nurse who signed the consent as a witness testified that the plaintiff signed the release during the afternoon while she was awake and before any sedative had been given.

On Aug. 5, 1946, the defendant, assisted by another physician, performed the operation. On making the opening in plaintiff's abdomen they found that the ovaries were not diseased but that the mass which had been felt on examination was a large tumor attached to the uterus adjacent to the right ovary and that the uterine wall was filled with multiple fibroid tumors. The surgeons consulted about the condition found, agreed that a subtotal hysterectomy was necessary and proceeded with that operation. On completion of the operation the plaintiff's husband was told what had been done, and when the effects of the anesthetic had subsided the plaintiff was likewise told what had been removed. Neither of them expressed any dissatisfaction, and the postoperative course was normal.

The defendant, his assistant surgeon and another local physician all testified that the operation was necessary in accordance with the standards of practice in the community to preserve plaintiff's health and that she would have continued to suffer from the bleeding had the uterus not been removed. There was evidence that plaintiff's condition of health might have become worse, that the bleeding would have continued and that the tumor might have become malignant. The plaintiff, on the other hand, produced medical testimony that the operation was not necessary to preserve her health.

The plaintiff argued the facts on appeal, said the appellate court, on the theory that the evidence given by her and in her behalf was to be accepted without regard to the evidence of any other witnesses. The rule is to the contrary. A reviewing court must view the evidence in the light most favorable to the party successful in the trial court and resolve all conflicts in his favor. Our power, said the court, "begins and ends with a determination as to whether there is any substantial evidence" sustaining the judgment. By reason of this rule, the appellate court continued, it is sufficient to say that the evidence sustains the verdict of the jury and the ensuing judgment.

Several of the plaintiff's objections were with reference to the signed consent to the operation. Since the evidence was conflicting as to (1) the conversations between the plaintiff and defendant in which the plaintiff was told what operation was probably necessary, (2) their conversations in which the plaintiff orally consented to an operation and what operation she consented to, (3) when the written consent was signed, whether before or after the sedative had been administered, and (4) whether the plaintiff knew what she was doing when she signed it, the court was required to accept the verdict and judgment as conclusive on those matters. The document was general in its terms and contained a consent to whatever operation might be found to be necessary or advisable. The purpose of the operation was to stop the vaginal bleeding that had continued for several months and to remove the growth on the female organs. It was the defendant's duty to do whatever was necessary to effect a cure. In exercising his best judgment as to what was the proper course to pursue, he was performing the professional service for which he had been employed. When a surgeon is confronted with an emergency or an unanticipated condition, said the court, and immediate action is necessary for the preservation of the life or health of the patient and it is impractical to obtain consent to an operation which he deems to be immediately necessary, it is the surgeon's duty to do what the occasion demands within the usual and customary practice among physicians and surgeons in the same or similar localities, and he is justified in extending the operation and in removing and overcoming the condition without the express consent of the patient. The plaintiff did have a right to offer evidence to the effect that her signature was secured through fraud or duress or while she was under the influence of a sedative or for any other reason she did not know what she was signing, and she did testify that she was not aware of what she was signing and that she signed the document after a sedative had been administered. In both of these particulars, however, she was contradicted by the nurse who signed as a witness to her signature. In view of this conflict, said the court of appeals, the implied finding of the jury against her contentions will not be disturbed.

By the signed consent the plaintiff agreed to any "operation which may be decided to be necessary or advisable." This instrument furnished the basis for the admission of evidence that a necessity existed for the removal of two thirds of plaintiff's uterus and that it was necessary for the defendant and his assisting surgeon to make an emergent decision on discovery of its condition. The trial court did not err, said the court of appeals, in admitting such evidence, nor was there error in the instruction to the effect that, if a doctor is confronted with an emergency and uses his best judgment, he is justified in proceeding with the operation. The plaintiff contended that, although an emergency may have existed, the removal of her uterus was not necessary at that time. This argument, said the court, is without force. An "emergency" is an unforeseen combination of circumstances which calls for immediate action. When an emergency occurs there is an immediate necessity to cope with it. The condition of the plaintiff's internal organs was not ascertainable with certainty until an incision had been made. The existence of a large fibroid tumor on the uterus and multiple tumors and nodules on the inner walls constituted an emergency which required the surgeons, in the light of their experience, to determine at once whether the removal of the diseased portion was necessary for the preservation of the plaintiff's health. The growth of the mass within a few months from the size of defendant's thumb to that of a lemon indicated a serious condition which was recognized by the Santa Barbara surgeon who told the plaintiff the growth "would become as large as a baby if not removed." The plaintiff had communicated that statement to the defendant. He therefore had not only his own years of experience and the advice of his assisting surgeon but the opinion of the Santa Barbara doctor. The latter had advised the plaintiff that the preservation of her health depended on the removal of the foreign growth, together with that portion of the uterus to which it was attached. The defendant would have been subject to grave censure had he closed the incision and awaited the plaintiff's recovery from the effects of the anesthetic in order to have further consultation with her concerning the removal of the alien material. Accordingly the judgment in favor of the defendant physician was affirmed and the order denying the plaintiff's motion for a new trial dismissed.—*Wheeler v. Barker, 208 P. (2d) 68 (Calif., 1949).*

Medical Motion Pictures

FILM REVIEW

On Our Own. 16 mm., black and white, sound, 382 feet, showing time fourteen minutes. Produced in 1949 by RKO Pathe, Inc., with the cooperation of the New York State Rehabilitation Hospital, West Haverstraw, N. Y. Procurable on loan from The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5.

This film shows the latest steps in the rehabilitation of patients with advanced poliomyelitis as practiced at the New York Rehabilitation Institute. Many of the ideas first introduced at the Institute for the Crippled and Disabled in New York City are now followed in this program.

The training of the patient to meet the demands of daily living is shown. The early steps in instruction in ambulation, the proper method of learning to apply one's own braces, the methods of getting in and out of chairs and the various types of crutch gaits are demonstrated, and instructions in climbing curbs, crossing streets, entering buses and ascending stairs are shown.

The film is recommended as a satisfactory exposition of the more advanced methods of physical rehabilitation of the patient who has been seriously disabled by poliomyelitis.

The photography and narration are good.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

18:297-340 (May) 1949

Congestive Heart Failure. J. T. Grimes.—p. 297.
Cutaneous Manifestations of Lymphoblastomas. I. D. London.—p. 300.
Critical Review of Fenestration Operation. E. R. Nodine.—p. 304.

18:341-396 (June) 1949

Primary Intracranial Tumors in Childhood. D. Buchanan.—p. 341.
Congestive Heart Failure. R. O. Russell.—p. 349.
Amebiasis. G. W. Millett.—p. 352.

American Journal of Diseases of Children, Chicago

77:703-816 (June) 1949

Psychosomatic Symptoms Resulting from Impact of War: Observations in Civilian Medical Practice. H. Miller and D. W. Baruch.—p. 703.
*Streptomycin Therapy in Tuberculous Meningitis. A. Levinson.—p. 709.
*Treatment of Infantile Congenital Syphilis: Results with Aqueous Penicillin Alone in 60 Infants Followed for an Average of Two Years After Treatment. E. K. Rose, P. György and N. R. Ingraham Jr. —p. 729.
Comparison of Vitamin B1 Levels in Mothers and Their Newborn Infants. L. B. Slobody, M. M. Willner and J. Mestern.—p. 736.
Urinary Glycocyamine, Creatine and Creatinine: I. Their Excretion by Normal Infants and Children. R. G. Flood and R. W. Pinelli.—p. 740.
Pinworm Infection and Childhood Behavior. E. Denhoff and M. W. Laufer.—p. 746.
Plasma Vitamin A and Its Clinical Significance: Review. H. C. S. Aron.—p. 763.

Streptomycin Therapy in Tuberculous Meningitis.—The 19 patients with tuberculous meningitis treated by Levinson ranged in age between 6 months and 13 years. The patients were given 200,000 units of streptomycin intramuscularly every three hours. The treatment was continued for ninety days. Patients who entered the hospital in a lethargic state, sometimes even moribund, became alert within a few days. In several children the temperature dropped immediately; in others it dropped after several days. The author learned not to be too enthusiastic about the early favorable response. Patients who appeared to be doing well for a long time suddenly took a turn for the worse and died. Seven of the 11 patients who died had survived for more than seven weeks and 1 for almost seven months after the beginning of treatment. The 8 who are alive have survived from three to fifteen months since the onset of the disease. It is still too early to state that streptomycin produced complete recovery in tuberculous meningitis. Some of the patients reported as recovered or clinically well either died later or became mentally deficient. One must not consider a patient with tuberculous meningitis completely recovered, as relapses may occur at any time and may result fatally. In consideration of the almost 100 per cent mortality associated with tuberculous meningitis under previous methods of treatment, all patients with tuberculous meningitis should be treated with streptomycin.

Penicillin in Infantile Congenital Syphilis.—In a previous report on the use of penicillin in congenital syphilis Rose and her associates discussed selection of cases, dosages, reactions, complications, deaths and immediate response to treatment. This report concerns itself more with long term observation of whether clinical or serologic relapses may take place in spite of initial clinical improvement. Sixty infants with congenital syphilis were treated with penicillin and followed for periods up to three years. Fifty-three of these are alive. Of the 48 living patients treated with penicillin intramuscularly, 37 were apparently cured (clinically well and with seronegative reactions); 7 were clinically well but still showed seropositive reactions, though the titer was declining; 3 were well but revealed no change in titer. Two of the latter were recently retreated. Five patients were treated with penicillin by mouth, and of these 4 infants responded satisfactorily. One older child, 2⅓ years of age, responded well, but his reaction remained seropositive after retreatment. The age of the patient at the onset of treatment, rather than the dosage, or means of administration of penicillin, seemed to be the chief factor in determining satisfactory response; cures approached 100 per cent when treatment was commenced before the third month of life. The amounts of penicillin administered intramuscularly varied from 20,000 to 200,000 units per pound (44,000 to 440,000 per kilogram) of body weight.

American Journal of Ophthalmology, Chicago

32:1-272 (June) Part II, 1949. Partial Index

Formation of Intraocular Fluid. J. S. Friedenwald.—p. 9.
Aniridia with Ectopia Lentis and Secondary Glaucoma: Genetic, Pathologic and Surgical Considerations. A. Callahan.—p. 28.
Gene Producing Various Defects of Anterior Segment of Eye with Pedigree of Family. H. F. Falls.—p. 41.
Three Cases of Marcus Gunn Phenomenon in Two Generations. H. F. Falls, W. T. Kruse and C. W. Cotterman.—p. 53.
Electrocoagulation of Sclera: Reduction in Ocular Volume and Pathologic Changes Produced. H. G. Scheie and B. Jerome.—p. 60.
Fate of Transplanted Ciliary-Body Tissue. E. P. Danforth.—p. 91.
Effects of Testicular Extract on Certain Ocular Structures. R. K. MacDonald.—p. 96.
Use of Alkyl-Dimethyl-Benzyl Ammonium Chloride for Maintenance of Sterility in Solutions. D. T. Hughson and N. C. Styron.—p. 102.
Effectiveness of Streptomycin in Treatment of Experimental Conjunctivitis Caused by Hemophilus Sp. D. J. Davis and M. Pittmen.—p. 111.
*Aureomycin in Ocular Infections: Study of Its Spectrum. A. E. Braley and M. Sanders.—p. 119.
Uveitis and Toxoplasmin Sensitivity. J. K. Frenkel.—p. 127.
Experimental Studies with Antibiotics: Bacitracin, Streptomycin, Penicillin and Antibiotic Mixtures in Intraocular Infections with Penicillin-Resistant Staphylococci. J. C. Locke.—p. 135.
Industrial Vision Technics. H. A. Imus.—p. 145.
Effect of BAL (2,3 Dimercaptopropanol) on Intraocular Copper. F. W. Newell, J. A. D. Cooper and C. J. Farmer.—p. 161.
Flicker Fusion Frequency in Amblyopia ex Anopsia. P. W. Miles. —p. 225.
Compression Tests on Aqueous Veins of Glaucomatous Eyes: Application of Hydrodynamic Principles to Problem of Intraocular-Fluid Elimination. K. W. Ascher and W. M. Spurgeon.—p. 239.

32:763-896 (June) Part 1, 1949

Surgical Treatment of Tumors and Cysts of Orbit. W. L. Benedict. —p. 763.
Local Use of Heparin in Eye: Pellet Implantation at Experimental Filtering Site. M. W. Bick and R. W. Haines.—p. 774.
Effect of Retrobulbar Alcohol Injection on Eyes of Experimental Animals. W. Kornblueth.—p. 781.
Histopathology of Interstitial Keratitis Due to Congenital Syphilis. C. Weskamp.—p. 793.
Present Concept of Therapy of Ocular Syphilis. D. O. Harrington and R. W. Hency.—p. 806.
Streptomycin in Clinical Ophthalmology. A. E. Schultz and J. R. Grunwell.—p. 813.
Fundus Lesions in Tuberculous Meningitis and Miliary Pulmonary Tuberculosis Treated with Streptomycin. M. A. Dollfus and C. H. Albaugh.—p. 821.
Removal of Intraocular Nonmagnetic Foreign Bodies: with Report of 6 Cases. J. S. Shipman.—p. 825.
Evaluation of Aniseikonic Case Reports. P. W. Miles.—p. 835.

Aureomycin in Ocular Infections.—Braley and Sanders used aureomycin borate locally and aureomycin hydrochloride intramuscularly in 401 patients with a wide range of ocular infections. The local use of 0.5 per cent solution of the drug produced no damage to the conjunctiva or cornea. The use of aureomycin was of value in 303 and of no value in 98 of the 401 cases. This antibiotic was effective against some of the gram-positive cocci and several gram-negative bacilli. It was found to be an effective therapeutic agent in inclusion conjunctivitis and in herpes simplex of the cornea. Its therapeutic effect in epidemic keratoconjunctivitis will require further investigation before results can be evaluated. It is more effective in epidemic keratoconjunctivitis than any of the other antibiotics or drugs tried. The intramuscular administration of aureomycin hydrochloride did not give rise to toxic reactions, and in only 1 patient was any general effect noted. A secondary anemia developed which was easily controlled by the administration of iron. The hydrochloride of aureomycin is somewhat irritating on intramuscular injection, but this irritation can be controlled by the addition of a small amount of procaine hydrochloride. There is some indication that aureomycin may be a valuable antibiotic in the treatment of uveitis. Aureomycin has a wide spectrum of activity in ocular infections.

American Journal of Physiology, Baltimore

156:299-470 (March) 1949. Partial Index

Respiratory Water Vapor at Simulated Altitude. L. H. Marshall and H. Specht.—p. 299.

Survival Time of Refrigerated Mammalian Muscle and Nerve After Somatic Death. T. Sollmann and J. J. Estable.—p. 328.

Starling's Law and X-Ray Density Changes of Heart Shadow. G. C. Ring, C. R. Michie and M. J. Oppenheimer.—p. 339.

Pancreatic Diabetes in Calf. E. T. Cook, J. A. Dye and E. L. McCandless.—p. 349.

Work Performance of Adrenally Insufficient Rats Given Adrenal Cortex Extract by Continuous Intravenous Injection. D. J. Ingle and J. E. Nezamis.—p. 365.

Failure of Adrenal Cortical Hormones to Protect Against Cold in Young Normal and Adrenalectomized Rats. D. E. Holtkamp, R. M. Hill, B. B. Longwell and others.—p. 368.

Antithyroid Activity of Ergothioneine. M. L. Wilson and D. A. McGinty.—p. 377.

Oral Effectiveness of d,l-Thyroxine in Crystalline, Monosodium and Disodium Forms. R. A. Monroe and C. W. Turner.—p. 381.

Study of Lipotropic Factors Derived from Pancreas. J. F. Canepa, M. I. Grossman and A. C. Ivy.—p. 387.

Vascular Refractoriness Produced by Benadryl and BAL. I. H. Page and A. A. Green.—p. 405.

Variations of Vascular Reactivity in Normal and Hypertensive Dogs I. H. Page and R. D. Taylor.—p. 412.

Effect of Hyaluronidase on Passage of Fluid and of T-1824 Through Capillary Wall. S. K. Elster, M. E. Freeman and A. Dorfman.—p. 429.

Urinary Flow and Excretion of Solutes During Osmotic Diuresis in Hydropenic Man. S. Rapoport, W. A. Brodsky, C. D. West and B. Mackler.—p. 433.

Improvements on Artificial Kidney: Experimental Study of Its Application to Dogs Bilaterally Nephrectomized or Otherwise Deprived of Renal Function. J. Vanatta, E. E. Muirhead and A. Grollman.—p. 443.

Blood Hypertensinogen in Early Hemorrhage Hypotension. G. C. Rau.—p. 454.

Enzyme Studies on Human Blood. IV. Interrelation of Heparin and Fibrinogen Fractions. G. Y. Shinowara.—p. 458.

American Journal of Public Health, New York

39:713-838 (June) 1949. Partial Index

Diagnostic Problems in Medical Mycology. C. W. Emmons.—p. 713.

*Histoplasmin Sensitivity Among Cattle. M. L. Furcolow and J. S. Ruhe—p. 719.

Histoplasmin Sensitivity and Coccidioidal Infection: I. Occurrence of Cross-Reactions. C. E. Smith, M. T. Saito, R. R. Beard and others.—p. 722.

*Isolation of Virus of Newcastle Disease from Human Beings. W. L. Ingalls and A. Mahoney.—p. 737.

Morbidity Surveys: Morbidity Survey in Public Health Work. G. St. J. Perrott.—p. 741.

How Processing Affects Nutritive Values of Grain Foods. F. W. Nordsiek.—p. 751.

Nutrient Retention During Canned Food Production. E. J. Cameron, R. W. Pilcher and L. E. Clifcorn.—p. 756.

Possible Significance of Milk and Water in Spread of Virus Infections. G. C. Brown.—p. 764.

The Dentist in the National Program of Cancer Control. A. V. Deibert.—p. 772.

Histoplasmin Sensitivity Among Cattle.—Furcolow and Ruhe show that histoplasmin reactors occur in cattle and that their geographic distribution in Kansas resembles that of histoplasmin reactors in human beings. Determination of the age-specific rates for cattle and men in a single county in Kansas makes it evident that the rates are similar in human beings and cattle of like age. From this it is deduced that both cattle and men are probably infected from the same outside source and that cattle do not constitute an animal reservoir of importance in the spread of the disease to human beings.

Virus of Newcastle Disease in Human Beings.—Ingalls and Mahoney report 2 cases of conjunctivitis thought to be due to the virus of Newcastle. One case occurred in a broiler plant operator on whose premises Newcastle disease was in progress; the second case occurred in a veterinary student who, in the course of his clinical work, autopsied 3 chickens affected with acute Newcastle disease. In the broiler plant operator identification of the virus was confirmed by hemagglutination, hemagglutination inhibition, serum neutralization technic and antibody response in chickens. In the student identification of the virus was confirmed by hemagglutination, hemagglutination inhibition and serum neutralization. Virus sent to the Pathologic Division, U. S. Bureau of Animal Industry, was identified as Newcastle virus. This is believed to be the first reported case of the isolation of the virus of Newcastle disease from man in the United States.

American Review of Tuberculosis, New York

59:601-728 (June) 1949

Empyema as Complication of Chronic Pulmonary Tuberculosis. O. Auerbach.—p. 601.

Tuberculous Spontaneous Pneumothorax. B. Hyde and L. Hyde.—p. 619.

*Use of Aureomycin in Pulmonary Tuberculosis. M. M. Steinbach, A. S. Dooneief and A. S. Buchberg.—p. 624.

Question of Contagion in Coccidioidomycosis. Study of Contacts. H. E. Bass, A. Schomer and R. Berke.—p. 632.

*Pulmonary Infiltration Associated with Sensitivity to Histoplasmin: Report of Case. D. W. Zahn.—p. 636.

*Correlated Study of Tuberculin, Histoplasmin and Coccidioidin Sensitivities with Pulmonary Calcifications in the Rocky Mountain Area. W. K. Absher and F. Cline Jr.—p. 643.

Tuberculous Pericarditis: Report of Case with Ten Year Follow-Up. S. Kreinin and J. A. Cooley.—p. 650.

Streptomycin in Treatment of Tuberculous Pericarditis: Report of 3 Cases. R. P. Johnson and B. A. Bercu.—p. 656.

Streptomycin in Experimental Tuberculosis: III. Effect on Pathogenesis of Early Tuberculosis in Guinea Pig Infected with Streptomycin-Sensitive H37 Rv Tubercle Bacilli. W. Steenken Jr. and P. C. Pratt.—p. 664.

Id.: IV. Effect on Pathogenesis of Early Tuberculosis in Guinea Pigs Infected with Streptomycin-Resistant H37 Rv Tubercle Bacilli. P. C. Pratt and W. Steenken Jr.—p. 674.

Transitory Infiltrates in Lungs with Eosinophilia (Loeffler's Syndrome): Review with Report of Case. V. F. Woolf and W. J. Gould.—p. 679.

Tuberculous Esophago-Cutaneous Fistulae Treated with Streptomycin and Gastrostomy: Report of Case. J. F. Lawson.—p. 687.

Skin Tuberculin Reaction for Assay of Tuberculin in Guinea Pigs. G. Chen and R. W. Sarber.—p. 692.

Inhibition of Tuberculin Type Reaction by Antihistaminic Drugs and Rutin. L. H. Criep, M. I. Levine and T. H. Aaron.—p. 701.

Aureomycin in Pulmonary Tuberculosis.—Steinbach and associates administered aureomycin to 3 patients with active, exudative forms of pulmonary tuberculosis. The oral route of administration was more satisfactory than the parenteral because adequate serum levels were obtained and there was little, if any, toxic effect. Although the drug was found to have tuberculostatic properties in vitro, there was no improvement in the 3 patients studied.

Histoplasmin Sensitivity with Pulmonary Infiltration.—According to Zahn, many instances of pulmonary calcification are not the result of previous infection with the tubercle bacillus but represent the end stage of infection with Histoplasma capsulatum. The practical importance of pulmonary lesions associated with histoplasmin sensitivity occurring in persons who do not react to tuberculin cannot be overemphasized. Such lesions, if not carefully investigated, may lead to an erroneous diagnosis of tuberculosis. Such a case concerned a man aged 26. His condition met the three criteria established for possible subclinical cases of histoplasmosis: (1) the individual has skin sensitivity to histoplasmin but not to tuberculin; (2) the lesion must persist at least two months, and (3) laboratory and clinical examinations must exclude the presence of tuberculosis and conditions such as sarcoidosis or Hodgkin's disease. The picture of the entity "benign histoplasmosis" has not yet been fully observed, and definitive statements regarding treatment cannot be made. The supposition that patients with this disease require little or no treatment has no basis and conceivably could lead to serious harm. These patients should be closely observed and followed with serial clinical laboratory and roentgenographic studies.

Pulmonary Calcifications in Rocky Mountain Area.—Absher and Cline say that extensive investigative studies have been undertaken concerning the etiologic factors responsible for multiple pulmonary calcifications. The results have cast doubt on the earlier concept that all multiple lung and hilar calcifications are tuberculous in origin. It now appears that fungous infections may play a significant role in the production of these calcifications, and a considerable number of cases have been shown to be associated with histoplasmin skin sensitivity. Histoplasma capsulatum infection occurs only in a relatively small endemic section of the country, namely: the East Central States. It would appear that the problem is of no practical concern to the physician of the Rocky Mountain Area. The fallacy of such thinking was illustrated to the authors. They conducted a survey of 1,000 veterans and Veterans Administration personnel in the Rocky Mountain Area relative to the problem of pulmonary fungous infections. Each subject was skin tested with purified protein derivative of tuberculin, 0.0005 mg., coccidioidin in a dilution of 1:100 and histoplasmin in a dilution of 1:100. The results of these skin tests were correlated with roentgenograms of the chest of the persons tested, 404 reacted to tuberculin alone and 14 of these showed multiple pulmonary calcifications; 73 reacted to histoplasmin alone, of whom 8 showed multiple pulmonary calcifications; 110 reacted to both histoplasmin and tuberculin, and in this group 16 showed multiple pulmonary calcifications. Twenty-four cases of hilar and/or parenchymal calcifications were noted in persons reacting negatively to all antigens. These observations confirm the findings of the U. S. Public Health Service investigators that the so-called benign histoplasmosis is not endemic in the Rocky Mountain Area. No diagnostic pattern or distribution of pulmonary calcifications was noted in either tuberculin-positive or histoplasmin-positive persons. It was observed that "halo" type pulmonary calcifications are not limited to histoplasmin-sensitive persons.

Annals of Surgery, Philadelphia

129:737-894 (June) 1949

Calcium Deposits in the Vicinity of Shoulder and of Other Joints. J. A. Key.—p. 737.
Partial Hepatectomy with Intrahepatic Cholangiojejunostomy: Useful Addition to Technical Methods for Management of Common Duct Stricture. H. Wilson and C. E. Gillespie.—p. 756.
Combined Supraduodenal and Transduodenal Exploration of Common Bile Duct. H. Mahorner.—p. 766.
Application of Technics of Reconstructive Surgery to Certain Problems in General Surgery. T. G. Blocker Jr., J. H. Hendrix Jr., G. C. Herrmann and E. Hall.—p. 777.
Thrombosis and Embolism: Five-Year Experience of Small General Hospital. R. C. Wigginton, W. H. Parsons and W. K. Purks.—p. 784.
*Comparison of Effectiveness of Newer Antibiotics in Experimental Peritonitis: Preliminary Report. G. H. Yeager, C. H. Ingram and W. A. Holbrook Jr.—p. 797.
*Effect of Intramuscular and Intrathecal Administration of Streptomycin in Normal Dogs and in Dogs with Meningitis Due to Escherichia Coli. C. Pilcher and E. R. Smith.—p. 810.
Ultraviolet Radiation as Adjunct in Control of Post-Operative Neurosurgical Infection: II. Clinical Experience 1938-1948. B. Woodhall, R. G. Neill and H. M. Dratz.—p. 820.
Reduplication of Stomach: Report of Case. G. T. McCutchen.—p. 826.
Management of Patients with Bleeding from Upper Gastro-Intestinal Tract with Buffer and Thrombin Solution. B. M. Daly, C. G. Johnston and G. C. Penberthy.—p. 832.
*Appraisal of Pancreatoduodenal Resection: Follow-Up Study of 61 Cases. R. B. Cattell and L. J. Pyrtek.—p. 840.
Results of Treatment of Patients with Hypertension by Total Thoracic and Partial to Total Lumbar Sympathectomy, Splanchnicectomy and Celiac Ganglionectomy. K. S. Grimson, E. S. Orgain, B. Anderson and others.—p. 850.
Evaluation of Treatment of Essential Hypertension by Sympathectomy. R. M. Penick Jr.—p. 872.
Presacral Enterogenous Cyst. C. L. Perry and J. W. Merritt Jr.—p. 881.

Antibiotics in Peritonitis.—Yeager and co-workers report the following experiments on dogs. The abdomen was entered through a right rectus incision and the appendix was drawn into the wound. Mesenteric attachments were divided, and the appendical vessels were clamped, divided and ligated. The distal half of the appendix was traumatized with a crushing clamp, the viscera replaced, and the incision closed. Immediately after operation each animal received 50 cc. of castor oil by stomach tube. Ten animals were used as controls. Of these, 8 died of acute diffuse peritonitis and 2 recovered. Ten animals were treated with streptomycin for eight days. Of these, 4 died of peritonitis and 6 recovered. Ten animals were treated with aureomycin for eight days. Of these, only 1 animal died, as late as the ninth day; 9 animals recovered. Chloramphenicol (chloromycetin®) was not available at the time of this study in sufficient quantity for a fair comparison. The animals in which it was used survived. Two patients with infections of the urinary tract due to Escherichia coli and 2 patients with generalized peritonitis were treated with aureomycin with favorable results. Other workers had suggested that the major field of usefulness of aureomycin is in infections with rickettsia and certain of the virus group. The results noted in the present study warrant more extensive observations of its effects in bacterial infections.

Streptomycin in Normal Dogs and in Dogs with Meningitis Due to Escherichia Coli.—Pilcher and Smith studied the effects of streptomycin in normal dogs and in dogs with meningitis due to Escherichia coli. Studies were made on several groups of normal dogs and in 100 animals in which Esch. coli meningitis had been produced. Intramuscular injection of streptomycin in the normal dog does not result in a significant amount of the drug in the cerebrospinal fluid. In dogs with Esch. coli meningitis intramuscular injection of streptomycin produces a slightly higher but therapeutically inadequate level in the cerebrospinal fluid. Intrathecal injection of large amounts of streptomycin may produce severe irritative and toxic effects. The severity and duration of these effects is approximately proportional to the size of the dose. The optimum daily intrathecal dose in the dog seems to be approximately 500 units of streptomycin per kilogram of body weight. Intramuscular streptomycin is ineffective against meningitis due to Esch. coli. Intrathecal streptomycin in Esch. coli meningitis is helpful but inadequate. Combined intrathecal and intramuscular therapy of meningitis due to Esch. coli has a beneficial effect on mortality rate, survival time and duration of positive cultures in blood and cerebrospinal fluid.

Pancreatoduodenal Resection: Follow-Up of 61 Cases.—According to Cattell and Pyrtek pancreatoduodenal resection, as described by Whipple and associates in 1935, was the first attempt to apply the principles of radical surgical measures for cancer to these serious and relatively inaccessible lesions. In a six year period, from 1942 to 1948, a total of 165 patients with carcinoma in the region of the head of the pancreas were observed at the Lahey Clinic, and on 56 of these a pancreatoduodenal resection was performed. During this time 5 additional patients had pancreatoduodenal resections for benign disease, giving a total of 61 cases of pancreatoduodenal resection. The authors stress the following points: 1. The operation is technically feasible. 2. With proper selection of cases and the employment of a two stage operation in selected cases, the operative mortality can be maintained at a level similar to that for other gastrointestinal cancers. 3. Physiologic functions as far as the gastrointestinal tract, the pancreas and liver are concerned can be established and maintained. 4. Carcinoma of the ampulla can be cured in an appreciable number of cases. 5. Pancreatoduodenal resection should be confined to favorable lesions. 6. Carcinoma of the head of the pancreas has not yet been cured. 7. The operation of pancreatoduodenal resection as now employed is suitable for carcinoma of the ampulla. Pancreatoduodenal resection for carcinoma of the head of the pancreas must be modified or discarded.

Archives of Internal Medicine, Chicago

83:593-732 (June) 1949

Ataxias: Review. D. Fiske.—p. 593.
*Radioactive Isotopes in Study of Peripheral Vascular Disease: I. Derivation of Circulatory Index. M. T. Friedell, F. Schaffner, W. J. Pickett and I. F. Hummon Jr.—p. 608.
*Id.: II. Method of Evaluation of Various Forms of Treatment. F. Schaffner, M. T. Friedell, W. J. Pickett and I. F. Hummon Jr.—p. 620.
*Clinical Studies on Dicumarol® Hypoprothrombinemia and Vitamin K Preparations: I. Superiority of Vitamin K_1 Oxide Over Menadione Sodium Bisulfite U.S.P. and Synkayvite® in Reversing Dicumarol® Hypoprothrombinemia. D. F. James, I. L. Bennett Jr., P. Scheinberg and J. J. Butler.—p. 632.
Endocarditis in "Main Line" Opium Addicts: Report on 11 Cases. W. F. Luttgens.—p. 653.
Asymptomatic Myocardial Infarction. M. E. Landman, H. S. Anhalt and A. Angrist.—p. 665.
Gastroenterology: Review of Literature from July 1947 to July 1948. J. B. Kirsner, W. L. Palmer, W. E. Ricketts and others.—p. 677.

Radioactive Isotopes in Vascular Disease: Derivation of Circulatory Index.—Friedell and associates describe tests in normal subjects and in some with arteriosclerosis, from results of which they derived a circulatory index that they believe will be of diagnostic and prognostic significance. One hundred patients from the wards of Cook County Hospital were each given an intravenous injection of 200 microcuries of radioactive phosphate, P^{32}, and the build-up curves indicating deposition of the radioactive isotope were determined. A semilogarithmic plotting of these curves resulted in what was essentially a straight line; the reciprocal of its slope was considered the index of circulation. These indexes fell into a normal distribution pattern, and the patients with arteriosclerosis and those over 50 years of age fell into well defined groups. The diffusion of P^{32} into the tissues was faster in older and in arteriosclerotic patients. Capillary dilatation is thought to be the chief cause of this phenomenon. The authors believe that stasis due to capillary dilatation rather than vascular spasm is responsible for the signs and symptoms of peripheral arteriosclerosis.

Radioactive Isotopes in Evaluation of Treatments for Vascular Diseases.—Friedell and associates studied the effect of treatment on an index of circulation, calculated from the rate of diffusion of intravenously injected radioactive phosphorus into the tissues of the lower extremity, which was described in the preceding paper. Four forms of treatment were used: administration of histidine monohydrochloride and ascorbic acid; lumbar sympathetc block with procaine hydrochloride; administration of test doses of 500 mg. of tetraethylammonium chloride, and lumbar sympathectomy. Thirty-four series of determinations were made on 26 patients, classified into four groups: patients for whom the circulatory index was (1) originally low and then rose toward normal; (2) originally low and later fell; (3) apparently originally normal and later fell, and (4) originally above normal and then rose even higher. The variations in the circulatory indexes were interpreted as signifying the response of the capillary bed to peripheral vasodilators. The capillaries are considered to have an independent circulation, based largely on the demand for and deficit of oxygen. The responses to treatment in the patients in the four groups were as follows: In group 1 the capillary tone was restored; in group 2 minor vasospastic elements were relieved but capillary dilatation persisted; in group 3 major vasospastic elements were relieved but capillary dilatation persisted or increased, and in group 4 deterioration of peripheral circulation was almost complete and amputation was required. The prognosis in groups 1 and 2 was favorable and in groups 3 and 4 unfavorable. The authors conclude that radioactive phosphorus is useful as a diagnostic and prognostic tool in the evaluation of peripheral vascular states, such as arteriosclerosis obliterans.

Dicumarol® Hypoprothrombinemia.—James and associates gave 101 patients dicumarol® in daily oral doses, 300 mg. the first day and 200 mg. on each successive day, until the prothrombin time exceeded that of normal control plasma diluted to concentration of 20 per cent with 0.85 per cent solution of sodium chloride. The patient was then either allowed to recover untreated to his normal prothrombin level or given large single doses of menadione sodium bisulfite U. S. P. (hykinone®), synkayvite® (tetrasodium salt of 2-methyl-1,4-naphthohydroquinone diphosphoric acid ester) or vitamin K_1 oxide (oxide of 2-methyl-3-phytyl-1,4-naphthoquinone). The efficiency of these substances was estimated by (1) the time elapsing between administration of the drug and the conversion of pronounced to moderate hypoprothrombinemia and (2) the time elapsing after administration of the agent until the appearance of a prothrombin level consistent with intravascular clotting. Vitamin K_1 oxide was strikingly more effective in both respects. For 26 patients given 0.5 Gm. or more of this material intravenously the prothrombin time arrived and stayed at a level lower than that of 30 per cent normal plasma in an average time of thirteen hours. When menadione sodium bisulfite (64 to 180 mg.) was given intravenously to 19 patients, this shortening of the prothrombin time was achieved in an average period of 4.7 days. When synkayvite® (100 to 500 mg.) was given intravenously to 6 patients, an average time of 5.3 days elapsed. Six patients with severe hypoprothrombinemia who were treated with 0.1 Gm. or more of vitamin K_1 oxide required an average of four hours to achieve a prothrombin concentration within what is generally regarded as a safe range. An analysis of time required for achievement of dicumarol® effect shows that about 1 of every 5 patients required five or more days to achieve significant therapeutic effect from dicumarol® in the usual doses. The requirement of an individual subject for dicumarol® is approximately predictable on the basis of the degree of his previous responsiveness to the drug. An exception to this situation occurs shortly after the administration of vitamin K_1 oxide, after which patients are relatively insensitive to dicumarol.®

Archives of Neurology and Psychiatry, Chicago

61:599-734 (June) 1949

Muscular Atrophy in Diseases of Lower Motor Neuron: Contribution to Anatomy of Motor Units. G. Wohlfart.—p. 599.
Superiority Attitude and Rigidity of Ideas. H. J. Darmstadter.—p. 621.
Lesions of Spinal Cord (Transverse Myelopathy) in Acondroplasia. A. Vogl and R. L. Osborne.—p. 644.
Measurement of Sensation: I. Vibratory Sensation. J. A. Toomey, L. Kopecny and S. Mickey.—p. 663.
*Surgical Treatment of Sciatica: Results Three to Eight Years After Operation. D. H. Echols.—p. 672.
*Point of Action of 3-o-Toloxy-1,2-Propanediol (Lissephen®) and Effects on Nervous System. I. Finkelman.—p. 680.
Intrapeduncular Hemorrhage of Brain: Successful Operative Approach, with Evacuation of Clot and Seven and One-Fourth Year Observation Period. W. B. Scoville and J. L. Poppen.—p. 688.
Electroencephalogram After Injury to Spinal Cord in Man. J. K. Merlis and C. W. Watson.—p. 695.

Surgical Treatment of Sciatica.—According to Echols the painful state formerly called chronic or recurrent sciatica is now known to result from compression of a nerve root within the spinal canal or its foramen. There is still controversy concerning treatment. Many neurosurgeons are of the opinion that the compressed nerve root should be decompressed and the offending disk partially removed but that spinal fusion should not be performed. Many orthopedists are advocating some type of internal fixation of the spine at the time of removal of the disk (combined operation). The author, a neurosurgeon, has collaborated at the combined operation whenever it has been recommended by the orthopedist. When, after ten years' experience, he and his colleagues realized that they had acquired no convictions regarding the combined operation, they decided to make a follow-up study of 151 patients with a preoperative diagnosis of ruptured lumbar disk who had primary intraspinal exploration during the five year period ending Dec. 31, 1944. One hundred and nine had ruptured disks which were partially removed; 14 had combined operations (removal of ruptured disk plus spinal fusion in 8 and spinal fusion in only 6); in 9 patients exploration showed normal disks; 14 patients had a lesion of some other type, such as metastatic carcinoma, and in 5 patients exploration was incomplete. The present review is concerned with the 109 patients treated by partial removal of the disk. Of these 109 patients 91 per cent were classified as having a good result, because they were working full time without disability and with only minor complaints referable to the back and leg Since results of operation for removal of a ruptured disk are so satisfactory in carefully selected cases, the combined operation would seem to be contraindicated except in unusual circumstances.

Lissephen® and the Nervous System.—Finkelman studied the effect of lissephen® (3-o-toloxy-1,2-propanediol) in general, as well as on peripheral nerves, the spinal animal, the decerebrate preparation, the motor cortex and the pyramids. Lissephen® in appropriate doses caused paralysis, immobility, disappearance of most of the reflexes, head drop and lowered response to sensory stimuli. In toxic doses it caused death from respiratory failure. The effect of lissephen® on peripheral nerve is unlike that of curare. Electrical studies revealed little or no change in rheobase, chronaxia, galvanic tetanus ration or repetitive stimuli ratios, even after toxic doses were administered. Lissephen® caused the disappearance of tone in a spinal animal. The flexor responses to nociceptor stimuli applied to the body were first to disappear, and later those applied locally disappeared. Then the contralateral extensor thrust, ankle clonus and fanning response of the toes disappeared. All these responses reappeared within thirty minutes, in that order, including the spasticity. Lissephen® caused immediate disappearance of the rigidity of a decerebrate animal. All the reflexes, including labyrinthine and tonic neck reflexes, were abolished. Within twenty-five minutes the rigidity, as well as the reflexes, reappeared. Lissephen® did not abolish strychnine spikes in the motor cortex, whereas those led off from the pyramids were suppressed. The effect of lissephen® lasts seven to thirty minutes, the longest action being observed in a spinal animal. Studies on peripheral nerve revealed that lissephen® does not act at the myoneural junction. There was evidence that the effect was not the result of anesthesia but was exerted on subcortical efferent pathways.

Archives of Otolaryngology, Chicago

49:575-694 (June) 1949

Role of Allergy in Epidemiology of Common Cold. N. Fox and G. Livingston.—p. 575.
Congenital Choanal Atresia: New Transpalatine Technic. D. A. Dolowitz and E. B. Holley.—p. 587.
Which is the Preferable Method of Performing Caloric Test? L. B. W. Jongkees.——p. 594.
Benign Cysts of Paranasal Sinuses. H. F. Schuknecht and J. R. Lindsay.—p. 609.
Mixed Tumor of Region of Head. D. P. Cordray.—p. 631.

Archives of Pathology, Chicago

47:517-632 (June) 1949

*Pulmonary Adenomatosis of Man: Review of Literature and Report of 9 Cases. L. L. Swan.—p. 517.
Megakaryocyte: III. Pseudothrombocytes. E. Schwarz.—p. 545.
Adrenal Pheochromocytoma. J. L. Pinniger and J. B. Brown.—p. 557.
Genic Factors in Visceral Asymmetry and in Development and Pathologic Changes of Lungs, Heart and Abdominal Organs. J. Torgersen.—p. 566.
Effect of Tripelennamine Hydrochloride on Burn Shock. R. M. Gunnar and R. E. Weeks.—p. 594.
*Primary Systemic Amyloid Disease: Report of Case Emphasizing Cardiac Involvement. J. B. Hartney, A. A. Biederman, J. M. Blumberg and C. L. Leedham.—p. 598.
Meckel's Diverticulum with Aberrant Pancreatic Tissue and Polyp Containing Gastric Glands. M. C. Wheelock and H. A. Teloh.—p. 612.

Pulmonary Adenomatosis in Man.—The object of this report, according to Swan, is (1) to review cases not included in those collected by Neubuerger and Geever in 1942, (2) to present 9 cases from the files of the Army Institute of Pathology, (3) to examine theories concerning histogenesis and cause, and (4) to consider whether pulmonary adenomatosis is related to carcinoma of the lung. Swan believes that pulmonary adenomatosis is the preferable designation for so-called alveolar cell tumor of the human lung. If metastases occur, the term should be modified by adding the adjective cancerous (cancerous pulmonary adenomatosis). Criteria proposed for the diagnosis of pulmonary adenomatosis are: (1) alveolar cellular proliferation characterized by the appearance of tall columnar mucus-producing cells; (2) absence of an intrinsic tumor of the bronchial tree, and (3) absence of primary adenocarcinoma of any other part of the body. The disease apparently is not infectious. The majority of observers are of the opinion that pulmonary adenomatosis is an extrabronchial neoplasm with cancerous potentialities. In none of the cases presented was there conclusive evidence as to the exact site of origin. Although these tumors appear histologically noncancerous, clinically they must be considered cancerous, since they may kill by local growth or by metastasis.

Primary Systemic Amyloid Disease.—According to Hartney and his associates amyloid is a peculiar member of the group of connective tissue hyalins set apart from the others by the following characteristics: it appears in persons who have passed through a long, wasting illness and it involves principally the parenchymatous organs (liver, spleen and kidney) and the adrenal glands. To date, some 50 cases of primary systemic amyloidosis have been recorded in the literature. On 48 of these necropsy reports are available. Forty cases were reported up to 1945. The frequency of reports in the last several years indicates that this disease may not be as rare as was previously thought. An additional case is now reported. A woman aged 39 was hospitalized Feb. 5, 1948 and died eighteen days later. Necropsy revealed primary systemic amyloidosis involving the interstitial tissues of the heart, the liver, the spleen, the adrenal glands and the uterus, the small and medium-sized arteries of these organs, together with those of the kidneys, the ovaries, the uterine tubes, the gastrointestinal tract, the lungs, the pancreas and the bone marrow. This case fulfills the most important criteria of primary systemic amyloidosis in that there is no evidence of any preexisting condition recognized as capable of bringing about the formation of amyloid. This case further substantiates the observation of Lindsay that primary systemic amyloidosis should be considered in the differential diagnosis of cardiovascular disease whenever the cause is obscure and the symptom complex and the clinical observations are bizarre.

Diseases of Chest, Chicago

15:631-762 (June) 1949

*Value of Streptomycin in Treatment of Tuberculosis. H. C. Sweany.—p. 631.
Synthesis of Prevailing Patterns of Bronchopulmonary Segments in the Light of Their Variations. E. A. Boyden.—p. 657.
Surgical Treatment of Emphysematous Blebs and Bullae. O. T. Clagett.—p. 669.
Tetralogy of Fallot: Surgical Treatment. A. Rodriguez Diaz and H. Anido.—p. 684.
Importance of Various Mechanical and Circulatory Postoperative Pulmonary Complications. L. F. Knoepp.—p. 690.
Electrocardiographic Patterns in Pneumothorax. R. N. Armen and T. V. Frank.—p. 709.
Abstract of Replies to Questionnaire on Intrapleural Artificial Pneumothorax. E. W. Hayes.—p. 720.
Treatment of Aortic Aneurysms of Wrapping with Foreign Body. J. K. Poppe.—p. 726.
Nutrition in Far Advanced Tuberculosis: Preliminary Study. C. W. Anderson, J. N. Medefind and J. D. Davis.—p. 734.
Cervical Vagus Sympathetic Block in Pulmonary Embolism. W. A. Werner and L. H. Ferguson.—p. 741.

Streptomycin in Tuberculosis.—Sweany reviews the use of streptomycin in tuberculosis. Streptomycin suppresses the growth of practically all strains of tubercle bacilli for periods of several weeks to several months. Resistance to streptomycin develops partially or completely in about 80 per cent of strains of tubercle bacilli on or before one hundred and twenty days of treatment. Recent lesions (probably those retaining blood circulation) respond most favorably to treatment with streptomycin; lesions respond less favorably as they become more caseous or fibroid in character. The optimum dosage of streptomycin is around 1 Gm. a day, although 0.5 Gm. a day has been used with success. The author has given 0.5 Gm. a day to adult patients under 150 pounds (68 Kg.) and 0.75 Gm. a day to those over 150 pounds for forty-five to one hundred and twenty days or until the development of bacillary resistance. In infants and children under 50 pounds (22.7 Kg.) 0.1 to 0.3 Gm. has been found adequate. Only 1 instance of labyrinth disease has developed on this regimen. Of 863 patients in whom treatment was completed with the 0.5 to 0.75 Gm. dosage, 470 (54.5 per cent) were improved in a substantial and more or less permanent way, have recovered, are progressing toward recovery or have undergone surgical treatment. There were 670 nonsurgical cases, 425 of which were pulmonary. In these pulmonary cases 223 patients were improved. In the 245 nonsurgical, nonpulmonary cases, 148 patients showed improvement. Surgical intervention was recommended in 193 cases; 99 patients have successful operative treatment and 28 underwent surgical intervention but have had postoperative complications; 66 patients have refused surgical treatment or the operation has been delayed. In meningeal, miliary, bone, joint and genitourinary lesions, 1 to 1.5 Gm. of streptomycin is still recommended, but dihydrostreptomycin in doses up to 2 Gm. is preferred because of its lower neurotoxicity.

Gastroenterology, Baltimore

12:919-1048 (June) 1949

*Gastric Perforation: Clinicopathologic Study. J. G. Shellito and A. B. Rivers.—p. 919.
Comparative Study of Colloidal Red Test in Liver Diseases with Special Reference to Zinc Turbidity, Thymol Turbidity and Bromsulphalein Tests. H. A. Strade, L. B. Dotti and S. J. Ilka.—p. 934.
Relationship Between Secretions of Gastric Mucosa and Its Morphology as Shown by Biopsy Specimens. I. J. Wood, R. K. Doig, R. Motteran and others.—p. 949.
Studies on Liver Function and Blood Proteins in Allergic Individuals. J. M. de la Vega and M. Salazar Mallen.—p. 959.
Gastroscopic Perforation of Esophagus and Stomach: Report of 3 Cases. L. M. Asher and S. Cohen.—p. 966.
Study of Action of Prostigmine on Bowel of Human Beings. J. M. McMahon, C. F. Code, W. G. Sauer and J. A. Bargen.—p. 970.
Bromsulfalein Reactions: Clinical and Experimental Study. S. J. Stempien and R. C. Rosenquist.—p. 978.
*Hereditary Hemorrhagic Telangiectasia with Intestinal Bleeding: Case Report and Therapy with Topical Thrombin. K. Plummer, J. O. Burke and J. P. Williams.—p. 988.

Gastric Perforation.—Shellito and Rivers report on 195 perforations of the stomach, the records of which were taken from the files of the Mayo Clinic. Perforation occurred in 10 per cent of the cases of benign gastric ulcer encountered at the Mayo Clinic from 1936 through 1946 and in 1 per cent of the cases of a malignant gastric lesion encountered from 1908 through 1947. The average age of patients in both groups was 52.7 years. The ratio of males to females was 6.8:1 in the cases of perforated benign gastric ulcer and 3.9:1 in the cases of perforated malignant lesion of the stomach. The pancreas was involved in only 51 per cent of the patients who had perforation of a malignant lesion of the stomach and in 81 per cent of those with perforated benign gastric ulcer. Perforations of malignant gastric lesions were usually larger than those of benign lesions. A lesion in the stomach which at operation appears larger than 2 cm. in diameter should be considered malignant until proved otherwise. Duodenal ulcer was associated with benign perforated gastric ulcer in 13 per cent of patients. There was no association of duodenal ulcer with perforated gastric lesions of the adenocarcinoma type. A rigid abdomen in the presence of a gastric ulcer of the perforating type should be considered indicative of a surgical emergency. In the presence of free gastric perforation, either benign or malignant, the operation of choice is gastric resection. If this procedure is not feasible, a primary closure followed by gastric resection at a later date is the procedure of choice. Walled-off perforation of the stomach, benign or malignant, is best served by gastric resection. There are no diagnostic features in the history, physical examination or the laboratory examination which will serve to differentiate the benign from the malignant gastric lesion. The only certain procedure, in such a differentiation, is the pathologic examination of the lesion.

Topical Thrombin in Intestinal Bleeding.—Plummer and associates report a case of severe intractable hemorrhage due to hereditary hemorrhagic telangiectasia involving the ileum and jejunum and requiring transfusion of 86 pints (41 L.) of whole blood in eighty-four days to insure survival during efforts at hemostasis. The usual agents which are supposed to affect capillary permeability and coagulation, rutin, vitamin C, vitamin K and moccasin venom, were used in maximum doses to no avail. Topical thrombin, 5,000 units every eight hours, instilled into the duodenum was followed by immediate and striking improvement with cessation of bleeding after five days. At the time of reporting, six months later, there had been no recurrence.

Illinois Medical Journal, Chicago

95:325-382 (June) 1949

Challenge: President's Address. P. E. Hopkins.—p. 340.
Vagotomy in Treatment of Gastro-Intestinal Ulceration. A. M. Vaughn.—p. 343.
Experience with Cardiolipin. D. B. Dorsey.—p. 350.
X-Ray Therapy of Inflammatory Lesions of Eyelids. E. C. Albers and H. M. Buley.—p. 355.
Regional Ileitis and Neurosis. G. A. Wiltrakis and J. C. Hudell.—p. 360.
Abdominal Pregnancy. R. K. Kinney.—p. 364.
Acute Regional Ileitis in 80 Year-Old Male. A. C. Meyer and A. R. K. Matthews.—p. 367.
Chronic Right Lower Quadrant Pain with Urinary Symptoms. E. L. Etherton, J. H. Skiles and C. A. Siler.—p. 369.
Intussusception of Appendix. M. E. Conway.—p. 370.

Journal of Infectious Diseases, Chicago

84:221-318 (May-June) 1949

Toxic and Allergic Manifestations Produced by Tissues and Fluids of Ascaris: I. Effect of Different Tissues. J. F. A. Sprent.—p. 221.
Virus Isolation and Serologic Studies on Patients with Clinical Mumps. E. W. Hook Jr., S. O. Poole and W. F. Friedewald.—p. 230.
Further Studies on B5W, Anaerogenic Group in Enterobacteriaceae. C. A. Stuart, S. Formal and V. McGann.—p. 235.
Further Observations of Inhibitor in Human Serums of Hyaluronidase Produced by Strain of Hemolytic Streptococcus. G. J. Friou.—p. 240.
Blood pH as Factor in Genetic Resistance to Mouse Typhoid. J. A. Weir.—p. 252.
Cysteine and Related Compounds in Growth of Yeastlike Phase of Histoplasma Capsulatum. S. B. Salvin.—p. 275.
Studies on Suppression of Fungus Growth by Thiourea: III. Effects of Protein Fractions, Amino Acids and Thiol Compounds. M. Tager, H. B. Hales and T. S. Danowski.—p. 284.
Infections Induced in Mice by Local Application of Streptococci and Pneumococci to Nasal Mucosa and by Intrapulmonary Instillation. L. S. Sonkin.—p. 290.
Isolation of Eastern Equine Encephalomyelitis Virus from Naturally Infected Monkey (Macacus Philippinensis). H. R. Livesay.—p. 306.
Study of Mode of Action of Substances Which Enhance Bacterial Invasiveness. C. Sandage and O. K. Stark.—p. 310.

Journal of Thoracic Surgery, St. Louis

18:279-434 (June) 1949

Segmental and Lobular Physiology and Pathology of Lung. E. D. Churchill.—p. 297.
*Intrathoracic Meningocele. F. X. Byron, E. E. Alling and P. C. Samson.—p. 294.
Use of Tubed Pedicle Grafts in Carcinoma of Upper Esophagus. E. M. Bricker, T. H. Burford and B. Eiseman.—p. 304.
Transthoracic Small Bowel Substitution in High Stricture of Esophagus. A. W. Harrison.—p. 316.
Completing Multiple-Stage Operation for Atresia of Esophagus. C. R. Lam.—p. 327.
Decortication in Pulmonary Tuberculosis Including Studies of Respiratory Physiology. J. Gordon, R. Brook and E. S. Welles.—p. 337.
Decortication of Unexpanded Tuberculous Lung Following Pneumothorax. J. A. Weinberg and J. D. Davis.—p. 363.
*Physiologic Observations Concerning Decortication of Lung. G. W. Wright, L. B. Yee, G. F. Filley and A. Stranahan.—p. 372.
Allergy in Pulmonary Tuberculosis with Special Reference to Autotuberculinization. A. R. Judd.—p. 389.
Cystic Disease of Lung. J. E. Strode.—p. 404.
Glomus Tumor of Mediastinum. G. V. Brindley Jr.—p. 417.

Intrathoracic Meningocele.—Byron and co-workers state that a high percentage of mediastinal tumors that are observed to be uniformly opaque, well defined, rounded or lobulated masses in the posterior mediastinum will prove to be neurofibromas. When there is also bony absorption of adjacent posterior rib ends and the cutaneous manifestations of neurofibromatosis of von Recklinghausen, the diagnosis of mediastinal neurofibroma is usually made. The authors cite 3 cases which indicate that this typical picture may lead one into error. In the first of these patients, when the chest was entered posterolaterally through the bed of the fourth rib, a huge thin-walled cyst was found. Further dissection revealed the cyst wall to be continuous with the dura through a defect arising as the result of enlargement and coalescence of the intervertebral foramen of the second and third dorsal vertebrae, absorption of the pedicle of the third dorsal vertebra and erosion of the posterolateral aspects of the bodies of the second and third dorsal vertebrae. Through this defect could be seen the spinal cord and, higher in the spinal canal, at about the level of the seventh cervical segment, the inferior aspect of a small intraspinal cyst. The defect was closed by utilizing a portion of the cyst wall or dura as a flap. This was then covered by a *free pleural graft and a layer of absorbable gelatin sponge.* This patient did well following operation. In the second patient no effort was made to remove the meningocele, since it was asymptomatic and in a protected place. The third patient died in the course of the operation, and postmortem examination revealed a tissue-thin meningeal sac projecting extrapleurally through the enlarged intervertebral foramen of the seventh cervical vertebra The spinal cord was visible through the opened sac. Reviewing the literature, the authors discuss 5 cases; in 2 of these excision of the sac was performed, and the patients died as a result of empyema and meningitis. The chief diagnostic aid in differentiating between meningocele and neurofibroma is the intraspinal injection of opaque medium.

Physiologic Observations Concerning Decortication of the Lung.—Wright and associates present data obtained from a study of 3 cases of decortication of the lung. One is representative of chronic traumatic hemothorax; another is an example of chronic tuberculous empyema, pneumothorax and unexpandable lung, and the third is a case of spontaneous hemopneumothorax that persisted with a febrile reaction but sterile pleural fluid. Plombage (either air or liquid) plus the immobilizing effect of a relatively nonelastic membrane overlying the pleural surface seriously cripples the respiratory apparatus. Surgical evacuation of the plombage and removal of the visceral peel will, as in case 1, effect a restitution to virtually normal pulmonary and circulatory function. Reexpansion of lung tissue is not always followed by recovery of normal pulmonary and circulatory function of the involved lung. This was observed in cases 2 and 3. In case 2 decortication eventuated in an abnormal relationship between circulation and ventilation in the reexpanded lung tissue. The ultimate degree to which the reexpanded lung regains its normal physiologic capacities probably depends on the extent and nature of the histologic alteration in the collapsed lung and probably also to the length of time the lung is collapsed. In none of these 3 cases was the parietal membrane peeled from the underlying pleura; in case 1, this apparently made no great difference in the ultimate outcome. The membrane was present during a relatively short period. In case 2, the membrane had been present for years and, in spite of its not having been removed, there was evidence of some improvement in mobility of the underlying lung tissue. As to whether there would be better mobility had the parietal membrane been stripped is a matter of conjecture. It is apparent from these studies that reexpansion and an improvement of lung mobility are of no avail if ventilation and circulation are not improved at the same time. These studies also indicate the need for detailed physiologic investigation of patients before and after decortication. Data thus obtained might in time enable one to predict the degree to which the reexpanded lung will recover physiologic integrity after decortication.

Kentucky Medical Journal, Bowling Green

47:163-198 (May) 1949

The Thyroid—Résumé of Medical Versus Surgical Therapy of Its Diseases. J. D. Hancock.—p. 169.
Practice of Pediatrics in Small Town. R. L. Rice.—p. 173.
Treatment of Rocky Mountain Spotted Fever. R. B. Warfield.—p. 177.
Prevention of Rheumatic Fever. R. A. Lyon.—p. 180.
Trends of Immunization of Children. H. S. Andrews.—p. 185.
Face Presentations. N. M. Garrett.—p. 190.
The Skin as Organ of Expression: Case Report. C. Baron.—p. 192.

47:199-246 (June) 1949

Acute Pancreatitis and Rational Therapy. J. B. Floyd Jr.—p. 220.
Pediatric Surgery. E. B. Mersch.—p. 224.
Rehabilitation in Chronic Disease. H. E. Richey.—p. 228.
Brain Tumors: Some Remarks on Diagnosis. E. G. Grantham and L. H. Segerberg.—p. 233.
Recent Advances in Urology. R. Lich Jr.—p. 237.

Minnesota Medicine, St. Paul

32:569-672 (June) 1949

Cerebral Angiography. L. A. French and P. S. Blake.—p. 589.
*Nevoxantho-Endothelioma. C. W. Laymon and E. P. Schoch.—p. 596.
Inguinal and Femoral Hernioplasty. C. B. McVay.—p. 599.
Adrenal Sympathoblastoma (Neuroblastoma). E. A. Loomis and G. L. Loomis.—p. 606.
Laboratory Studies of Cerebrospinal Fluid in Meningitis and Poliomyelitis. H. H. Joffe and A. H. Wells.—p. 608.
Sarcoma of Uterus. F. H. Magney.—p. 613.
The Child, the Surgeon, the Operation. R. A. Jensen.—p. 616.
Value of Rorschach Test. G. R. Kamman.—p. 621.
Cholecystectomy: Technic for Occasional Operator. G. M. A. Fortier. —p. 625.

Nevoxanthoendothelioma.—According to Laymon and Schoch nevoxanthoendothelioma was the term used by McDonagh in 1912 to describe an odd type of xanthoma characterized by the development, early in life, of a group or groups of yellowish or yellowish brown papules or nodules, chiefly on the extensor surfaces. The authors report 4 cases and stress that nevoxanthoendothelioma is an unusual type of juvenile xanthoma, characterized by yellow or reddish nodules present at birth or developing shortly thereafter. The general health is not affected, and there is a tendency toward spontaneous involution, although the lesions may persist for several years. The values for the blood lipoids are normal. The histologic picture is distinctive and consists of a proliferation of the connective tissue and an infiltrate of histiocytes and endothelial giant cells. Foam cells and Touton giant cells are also present. Appropriate stains reveal lipoids in the infiltrated areas.

Missouri State Medical Assn. Journal, St. Louis

46:391-458 (June) 1949

Ectopic Pregnancy: Report of 106 Cases. W. H. Masters.—p. 405.
Dermatitis of Hands. R. L. Sutton Jr.—p. 410.
Polyarteritis Nodosa. R. M. Brooker.—p. 414.
Need of Belonging in War and Peace: Its Effect on Deliquency. N. Blackman.—p. 417.
Primary Atypical Pneumonia Treated with Aureomycin. M. Bernreiter and J. M. Holthaus.—p. 420.
Carcinoma of Colon and Rectum. E. D. Sugarbaker.—p. 421.
Practical Aspects of Diet in Pregnancy. R. N. White.—p. 430.

New England Journal of Medicine, Boston

240:863-904 (June 2) 1949

Metabolism of Radioactive Elements Created by Nuclear Fission. J. G. Hamilton.—p. 863.
*Radiation Syndrome. E. E. Painter and A. M. Brues.—p. 871.
Varicocele: Symptomatologic and Surgical Concepts. R. O. Olson and E. P. Stone.—p. 877.
Eosinophilia During Intensive Gold Therapy. E. H. Reisner Jr., L. Lapin and O. Steinbrocker.—p. 881.
Neurophysiology, 1942-1948. J. F. Fulton.—p. 883.
Hamartoma of Cloacal Tissue in Renal Pelvis.—p. 891.
Mucocele of Large Bowel Due to Strictures in Ulcerative Colitis of Defunctioned Bowel.—p. 894.

The Radiation Syndrome.—Painter and Brues summarize the theoretic aspects of the biologic action of ionizing rays on the organism and outline the clinical manifestations of the radiation syndrome. Their discussion is based on a review of the literature and on experimental data gathered during the past five years. They show that there are three distinct periods (initial shock, acute and subacute) in the radiation syndrome, produced by a single total-body thirty-day LD$_{50}$ of external radiation or of internal emitters of alpha or gamma rays. The initial shock may last from three to forty-eight hours. Occasionally rabbits and chickens die during the initial period. Other animals, such as dogs, rats, guinea pigs and goats, do not die but show prostration, diarrhea, urination, lacrimation and decreased food and water consumption. In addition, man and the dog often vomit. The acute period lasts from nine to twenty-one days, during which most of the animals die. Some of the radiation effects are directly due to destruction of certain tissue elements. Many others are indirect and may be attributed to infections, toxic agents, hypoxia and other secondary factors. Animals surviving thirty days or more fall into the subacute category. A severe anemia, emaciation and graying of dark-haired animals are the usual signs of the radiation syndrome in this phase. The chronic phase is characterized by shortening of life and sporadic increase in tumors. No single clinical reaction is peculiarly specific for radiation damage. A similar preterminal course with leukopenia and high sensitivity of dividing cells is found with such agents as nitrogen mustards and urethane. The acute terminal course with fever and petechiae is characteristic of acute infections and of many diseases. With the exception of the initial reaction, the acute phenomenon of the radiation syndrome follows a latent period during which cell damage and atrophy of the more sensitive tissues occur. Since these tissues (blood-forming organs, intestine and gonads) are proliferative, it is tempting to suggest that damage to chromosomes, which is known to lead to cell death at a subsequent cell division, accounts for the damage.

240:905-946 (June 9) 1949

Responsibilities of Medical Education. C. S. Burwell.—p. 905.
*Effect of Rice Diet on Level of Blood Pressure in Essential Hypertension. D. G. Loofbourow, A. L. Galbraith and R. S. Palmer.—p. 910.
Aspiration of Elbow Joint in Treatment of Fractures of Head of Radius. T. B. Quigley.—p. 915.
Neurophysiology, 1942-1948. J. F. Fulton.—p. 920.
Ulcer of Esophagus, with Perforation into Mediastinum and Left Pleural Cavity. Subacute Mediastinitis. Acute Empyema.—p. 927.
Perirenal Hematoma.—p. 933.

Rice Diet in Essential Hypertension.—Rice diet was used in the Hypertension Clinic of the Massachusetts General Hospital for a year. The authors attempted to determine whether this method is practical for use with ambulatory patients observed once a week while living in their normal surroundings and eating with other members of the family and what clinical results are obtained when the treatment is applied to such a group. The patient eats daily 4 cupfuls of cooked rice (about 1 cupful measured before cooking); fruits, either raw or cooked, with the exception of avocados, dates, nuts and tomatoes (canned fruits can be used if no preservative has been added); sugar (white only) is taken as desired; fluids are limited to 3 or 4 cupfuls of fruit juices, which should not contain artificial flavoring. The total number of patients instructed on the rice diet in nine months was 56. The success in maintaining patients on the diet is shown by the following figures: strict adherers, 16; moderate adherers, 20, and delinquents, 20. A significant drop in blood pressure occurred in 6 of the 16 patients who adhered strictly to the diet, and in the group of moderate adherers a significant drop occurred in 3 of 20 patients. Loofbourow and her associates feel that the method can be used with safety if the patients are carefully followed at frequent intervals.

Oklahoma State Medical Assn. Jour., Oklahoma City

42:181-236 (May) 1949

Induction of Labor. J. W. Baxter.—p. 184.
Role of Cervical Sympathetics in Treatment of Pain. A. Stowell.—p. 185.
Primary Renal Neoplasms. K. F. Swanson and C. Hulse.—p. 190.
Surgical Treatment of Endometriosis. L. A. Gray.—p. 192.
Resume of Insulin Shock Treatment at Central Oklahoma State Hospital. J. A. Rieger.—p. 196.

42:237-272 (June) 1949

Juvenile Diabetes. C. A. Brown.—p. 240.
Unusual Strangulated Hernias in Infants. H. C. Dodson Jr. and H. A. Burnett.—p. 243.
Diagnosis and Care of Pyloric Stenosis by Pediatrician. G. K. Stephens. —p. 246.

Pediatrics, Springfield, Ill.

3:735-882 (June) 1949. Partial Index

Pathogenesis of "Vernix Membrane": Relation to Aspiration Pneumonia in Stillborn and Newborn Infants. H. C. Miller and T. R. Hamilton. —p. 735.
*Aureomycin in Staphylococcic Meningitis Complicating Subarachnoid Hemorrhage in Sickle Cell Anemia. J. R. Almklov and A. E. Hansen. —p. 764.
Ovarian Tumors in Childhood. H. W. Dargeon.—p. 773.
Electroencephalography in Child Neurology and Psychiatry. H. H. Jasper.—p. 783.
Jet Injection in Pediatric Practice. J. G. Hughes, R. G. Jordan and F. S. Hill.—p. 801.
*Congenital Hemolytic Disease Resulting from A-O Isoimmunization. N. Mitchell, A. H. Moss, B. Redner and others.—p. 813.
Infantile Cerebral Palsy Cases with Severe Mental Deficiency: Relationship of Etiology to Type of Neurologic Syndrome. H. Yannet.—p. 820.
Meningococcemia with Meningitis Accompanied by Bilateral Gangrene of Lower Extremities (Waterhouse-Friderichsen Syndrome). C. P. DeFuccio and E. E. Dresner.—p. 837.
Brain Tumors in Children. H. M. Keith, W. M. Craig and J. W. Kernohan.—p. 839.
Phonocardiographic Differentiation of Murmur of Mitral Insufficiency from Some Commonly Heard Adventitious Sounds in Childhood. T. N. Harris, S. Friedman and C. F. Haub.—p. 845.

Aureomycin in Staphylococcic Meningitis.—Almklov and Hansen report the occurrence of a spontaneous subarachnoid hemorrhage in a Negro boy aged 11 years with sickle cell anemia. Of the 8 cases mentioned in the literature, 5 have occurred in children. In the study of sickle cell anemia there is an increasing awareness of subarachnoid hemorrhage and other neurologic complications such as hemiplegia, coma and convulsions. In the authors' case there developed meningitis due to Staphylococcus albus, which for twelve days resisted combined treatment with penicillin, streptomycin and sulfadiazine. Treatment was discontinued; because the patient's prognosis seemed hopeless it was thought justifiable to use an antibiotic agent experimentally. The patient was given 20 mg. of aureomycin intramuscularly every eight hours. Within two days the patient improved remarkably and was taking fluids by mouth. After five days the spinal fluid revealed only 5 cells per cubic millimeter; no organisms were seen on smear, and cultures were sterile. Aureomycin was given for a total of ten days, by the end of which time the patient had become alert and could recognize persons. There were no untoward reactions to the intramuscular administration of the drug. In vitro studies disclosed that when penicillin and aureomycin or streptomycin and aureomycin were combined, the result was a decrease in the effectiveness of either drug against staphylococci. The feature which probably played a role in the excellent response of the patient to aureomycin therapy was the decision to discontinue all other therapeutic agents. More effective results in the treatment of staphylococcic infections may be obtained if aureomycin is used as the sole antibiotic agent.

Congenital Hemolytic Disease.—Mitchell and others report 1 premature male infant and 2 full term female group A infants, born of Rh-positive mothers belonging to group O, in whom diagnosis of congenital hemolytic disease was based on a rapid onset of jaundice within twenty-four hours of birth, occurrence of anemia, presence of nucleated red blood cells in the peripheral smear, immunologic evidence of isoimmunization as determined by the high anti-A agglutinin titer in the mothers' serum (1:6,000, 1:10, 120 and 1:5,000) and demonstration of circulating isoimmune bodies in the blood of the male infant. The infants died on the sixth, third and fifth day of life. Typical anatomic changes of hemolytic disease were present at necropsy. Extensive kernicterus of the basal ganglions, hippocampal nuclei, periventricular pontine nuclei, cerebellar dentate nuclei and medullary olives in all cases also confirmed the diagnosis. The finding of free circulating antibodies in the male infant's blood obtained post mortem is of particular interest. These anti-A agglutinins were active only in albumin-plasma dilutions. The retention of the agglutinating property of this antibody in the blood of both infant and mother even after addition of specific Witebsky substances of A and B blood group indicate that it is probably an immune antibody. It is believed that A-O isoimmunization has been proved in these 3 cases.

Pennsylvania Medical Journal, Harrisburg

52:905-1032 (June) 1949

Present Status of Corneal Grafting. J. M. McLean.—p. 929.
Malignant Lesions of Nasal Fossae and Sinuses: Diagnosis and Treatment. A. T. Smith and T. P. Eberhard.—p. 932.
Reduction of Mortality in Surgery of the Aged. W. L. Estes Jr. —p. 937.
Contrasting Methods in Management of Uterine Malignancy. L. C. Scheffey.—p. 944.
Traumatic Arteriovenous Fistula of Lower Extremity. J. R. Watson. —p. 953.
Intestinal Intubation in Field of Pediatrics. J. A. Jones.—p. 958.
Endocrine Factors in Dermatology. P. H. Drant.—p. 966.

Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

24:309-340 (June 8) 1949

*Aureomycin in Treatment of Penicillin-Resistant Staphylococcic Bacteremia. D. R. Nichols and G. M. Needham.—p. 309.
Pathology of Intrapulmonary Arteries and Arterioles in Mitral Stenosis. W. F. Larrabee, R. L. Parker and J. E. Edwards.—p. 316.
Congenital Atresia of Esophagus with Tracheo-Esophageal Fistula Treated by Primary Esophageal Anastomosis: Report of 8 Cases. W. M. Ashe and W. D. Seybold.—p. 327.
Senile Hyaline Scleral Plaques: Report of 3 Cases. E. P. Drescher and J. W. Henderson.—p. 334.
Streptomycin Treatment of Ozena. K. M. Simonton.—p. 337.

Aureomycin in Staphylococcic Bacteremia.—In vitro studies revealed to Nichols and Needham that 34 of a total of 50 strains of staphylococci were resistant to penicillin and 14 of these 34 were resistant also to streptomycin. Staphylococcic bacteremia was discovered during 1948 in 15 patients at the Mayo Clinic, and 12 of the 15 strains of staphylococci were resistant to penicillin, while 3 of the 15 were resistant to streptomycin. In 6 patients the authors employed aureomycin, and 4 of these 6 recovered. The other 2 patients improved greatly when the drug was first given, and their blood cultures became negative. Intermittent intravenous administration was used at the onset of treatment in 4 of the 6 cases. A dose of 200 to 500 mg. of aureomycin in 250 cc. isotonic sodium chloride solution was administered once every four hours, every six hours or every twelve hours. Ten to fifteen minutes usually were allowed for the injection. The oral method of administration was used alone in 2 of the 6 cases and to complete the course of treatment in the other 4 cases. The dose of 500 mg., 750 mg. or 1 Gm. of the drug was administered orally every four or every six hours. Nausea and vomiting were encountered in 3 cases when this method of administration was used. Because of the investigative nature of this study, use of aureomycin was not started until late in the course of the infection. Results were not entirely satisfactory. Successful treatment of staphylococcic bacteria always has been dependent on the administration of an effective chemotherapeutic agent as early in the course of the infection as possible. In the future, when aureomycin is administered early in the course of the disease, a higher percentage of cures may well be anticipated. The authors do not advocate the use of aureomycin as a routine in staphylococcic bacteremia; in vitro studies should be instituted immediately to determine the sensitivity of the organism to different antibiotics. If the organism is resistant to penicillin but sensitive to aureomycin, or if the infection does not respond to penicillin, then aureomycin would appear to be the drug of choice.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

8:90-180 (June) 1949

Potential Reversibility of Rheumatoid Arthritis. P. S. Hench.—p. 90.
*Effect of Hormone of Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotrophic Hormone on Rheumatoid Arthritis: Preliminary Report. P. S. Hench, E. C. Kendall, C. H. Slocumb and H. F. Polley.—p. 97.
Drugs in Treatment of Rheumatic Disorders. N. Mutch.—p. 105.
*Massive Salicylate Therapy in Rheumatic Fever. G. Watkinson.—p. 120.
Thiouracil Administration and Thyroidectomy in Experimental Polyarthritis of Rats. H. B. Tripi, W. C. Kuzell and G. M. Gardner.—p. 125.
Comparative Results of Copper Salts and Gold Salts in Rheumatoid Arthritis. J. Forestier.—p. 132.
Serum Anti-Tryptase in Chronic Rheumatic Disease. H. Coke.—p. 135.
Familial Incidence of Rheumatoid Spondylitis. B. Rogoff and R. H. Freyberg.—p. 139.
Aetiology of Ankylosing Spondylitis. H. F. West.—p. 143.
Opaque Arthrography of the Knee Joint. A. E. Jowett.—p. 149.
Rheumatoid Arthritis and Amyloid Disease. B. Lush, E. Fletcher and J. F. Buchan.—p. 156.
Generalized Myositis Fibrosa: Case Report. J. A. Strong.—p. 158.

Adrenocortical Hormone in Arthritis.—Hench and associates state that the adrenal cortical hormone 17-hydroxy-11-dehydrocorticosterone, compound E, has been administered to 14 patients with severe or moderately severe rheumatoid arthritis. In each case improvement in clinical features and in sedimentation rates began to occur within a few days. When administration of the endocrine substance was discontinued, the disease generally promptly relapsed. Essentially similar clinical results accompanied by various biochemical effects were obtained from the administration of the pituitary adrenocorticotropic hormone to 2 patients. The rarity of these compounds now and in the immediate future, and the limited scope of these preliminary data (especially regarding prolonged administration) make inappropriate now the use of the term "treatment" except in an investigative sense.

Salicylate Therapy of Rheumatic Fever.—Watkinson describes results of salicylate therapy in 80 recruits at three Royal Air Force reception and training centers in whom rheumatic fever developed between April 1947 and July 1948. All were aged 18 except 2, whose ages were 23 and 26. All but 3 were men, and 15 admitted to a history of previous rheumatic fever. A history of recent infection of the upper part of the respiratory tract was obtained in 71.2 per cent, hemolytic streptococci being cultured from a throat swab on admission in 29 of 55 cases. An average period of 2.1 weeks occurred between the precipitating infection and the rheumatic attack. Three groups of patients were studied at three station hospitals employing varying salicylate dosage. Groups were comparable in numbers, in severity and in the incidence of previous rheumatic attacks. In the first group of 25 patients, salicylates were withheld in 14, but the others were given small doses not exceeding 100 grains (6.5 Gm.) daily. The second group was given 200 grains (13 Gm.) of salicylates daily, and 10 received in addition 100 grains (6.5 Gm.) of sodium bicarbonate daily. In group 3 adequate salicylate levels exceeding 30 mg. per hundred cubic centimeters were maintained by massive oral therapy. Dosage in this group showed large individual variation, from 120 to 600 grains (7.8 to 39 Gm.) daily. A significant reduction in the period of fever, arthralgia and active infection was demonstrated in the group receiving massive therapy. No reduction in the relapse rate or in the incidence of carditis was seen.

British Journal of Experimental Pathology, London

30:85-160 (April) 1949. Partial Index

Laterosporin A and Laterosporin B, Antibiotics Produced by B. Laterosporus. E. M. Barnes.—p. 100.
Acute Experimental Calcium Chloride Acidosis. A. D. T. Govan and J. Parkes.—p. 105.
Nature of Some Antibiotics from Aspergilli. D. Gill-Carey.—p. 119.
*Antibiotic Produced by Staphylococcus Aureus. J. F. Gardner.—p. 130.
Antibiotics from Penicilia. H. S. Burton.—p. 151.

Antibiotic Produced by Staphylococcus Aureus.—Gardner describes the production and properties of an antibiotic formed by a strain of Staphylococcus aureus. The properties of this antibiotic are such as to make it probable that it will have no therapeutic application.

British Journal of Ophthalmology, London

33:397-460 (July) 1949

Toxoplasmosis: Summary of Disease with Report of Case. H. Ridley.—p. 397.
Vascular Changes in Diabetes with Particular Reference to Retinal Vessels: Preliminary Report. N. Ashton.—p. 407.
Contact Lenses: Analysis of Results of Use. A. G. Cross.—p. 421.
Nature of Malignant Choroidal Melanomata. E. Wolff.—p. 445.
Studies on Intra-Ocular Fluids: Part 3.—Penetration of Some Nitrogenous Substances Into Intra-Ocular Fluids. S. Duke-Elder, H. Davson and A. M. Woodin.—p. 452.
Interstitial Keratitis Occurring in Case of Reiter's Disease. E. E. Cass.—p. 454.

British Journal of Radiology, London

12:355-414 (July) 1949

Structure of Biological Tissues as Revealed by X-Ray Diffraction Analysis and Electron Microscopy. W. T. Astbury.—p. 355.
Lateral Distribution of Ions Across Track of Ionizing Particle: Part I. Present Picture and Its Implications. J. Read.—p. 366.
Erythema Nodosum. J. H. Middlemiss.—p. 375.
Sesamoid at Elbow Analogous to Patella. G. L. Hardman.—p. 384.
Studies of Effect of Protraction of X Radiation by Twelve Fractionations on Erythema Reactions. H. Schöttelndreyer.—p. 386.
Carcinoma of Bladder. A. Jacobs, E. W. Riches and J. L. E. Millen.—p. 393.

British Medical Journal, London

2:1-40 (July 2) 1949

Man and the Machine. C. W. C. Bain.—p. 1.
Tuberculous Empyema. D. A. Andersen.—p. 6.
*Penicillin in Treatment of Influenzal Meningitis. F. Braid and R. B. Meyer.—p. 11.
Study of Post-War Incidence of Breast-Feeding. F. H. M. Dummer.—p. 14.
Aschheim-Zondek and Hogben Pregnancy Tests Modified and Compared. F. W. Landgrebe and B. M. Hobson.—p. 17.
Simple Weight-Reducing Diet. H. L. Marriott.—p. 18.

Penicillin in Influenzal Meningitis.—Braid and Meyer present observations on 15 cases of influenzal meningitis treated in the Birmingham Children's Hospital. Eleven of these were treated with sulfadiazine and penicillin, 3 with sulfadiazine, penicillin and streptomycin and 1 with sulfadiazine and streptomycin. Twelve of the 15 children are alive, and all are quite well with the exception of one (case 3), who is spastic and mentally defective. These cases show that penicillin, combined with orally given sulfadiazine in adequate dosage—960,000 units daily for three weeks at three hour intervals intramuscularly, and 40,000 units daily intrathecally for about seven days after the cerebrospinal fluid is sterile—provides an effective remedy in the treatment of severe as well as of moderately severe cases of influenzal meningitis. The fact that the organism is known to develop resistance renders streptomycin less generally useful.

Glasgow Medical Journal

30:*197-234 (June) 1949*

*Nitrogen Mustard Therapy in Reticuloses and Pulmonary Neoplasm: Report on 44 Cases. A. Brown and L. J. Davis.—p. 197.
Method for Estimation of Cholesterol in Urine Using Liebermann-Burchard Colour Reaction. W. M. B. Davidson.—p. 216.
Mapharside Treatment of 56 Cases of Lupus Erythematosus Discoides. T. Cochrane.—p. 222.
Use of Pertussis Vaccine in Day Nurseries. S. J. Strachan.—p. 228.

Nitrogen Mustard in Reticuloses and Pulmonary Neoplasm.—According to Brown and Davis the clinical use of the nitrogen mustards has been limited almost entirely to the bis and the tris forms, (methyl-bis [beta-chloroethyl] amine hydrochloride, and methyl-tris [beta-chloroethyl] amine hydrochloride). Most writers agree that the bis compound is less toxic and less liable to cause thrombosis, and it has been most widely used. The authors describe a clinical trial of this compound in 44 patients. These comprised 16 cases of Hodgkin's disease, 12 cases of various other disorders of the reticuloendothelial system and 16 cases of pulmonary neoplasm. The authors conclude that in none of these diseases should nitrogen mustard be regarded as an adequate substitute for radiotherapy. In Hodgkin's disease and allied conditions nitrogen mustard promises to be of value in conditions failing to respond satisfactorily to irradiation. In such cases it is probable that the administration of nitrogen mustard should be combined with further irradiation. In bronchogenic carcinoma nitrogen mustard exerts a decided palliative effect in a proportion of cases and may consequently be of value in the relief of distressing symptoms when radiotherapy is not readily available.

Journal of Physiology, Cambridge

108:375-530 (June 15) 1949. Partial Index

Method for Frequent Estimation of Forearm Blood Flow Under Conditions of Decreased Atmospheric Pressure. D. McK. Kerslake.—p. 398.
Enzymic Formation of Pressor Amines. H. Balschko, P. Holton and G. H. Sloane Stanley.—p. 427.
Changes in Water and Chloride Distribution During Heavy Sweating. W. S. S. Ladell.—p. 440.
Effect of Application of Arterial Occlusion Cuff to Wrist on Blood Flow in Human Forearm. D. McK. Kerslake.—p. 451.
Timing of Certain Circulatory Events in Man. W. Schlapp and A. G. Walker.—p. 458.
Estimation of Adrenaline and Allied Substances in Blood. J. H. Gaddum, W. S. Peart and M. Vogt.—p. 467.
Effect of Nicotine on Diuresis Induced by Ethyl Alcohol. M. G. Eggleton.—p. 482.
Nature of Splenic Sympathin. W. S. Peart.—p. 491.
Dependence of Neuromuscular Transmission on Glucose. I. Hajdu and R. J. S. McDowall.—p. 502.
Noradrenaline in Tumors of Adrenal Medulla. P. Holton.—p. 525.

Lancet, London

2:1-40 (July 2) 1949

Metabolism of Glutamic Acid. H. Waelsch.—p. 1.
*Ileostomy and Ulcerative Colitis. T. L. Hardy, B. N. Brooke and C. F. Hawkins.—p. 5.
*Use of English Male Toads in Pregnancy Test. A. Klopper and H. Frank.—p. 9.
Myxoma of Heart. D. R. Allison and W. Susman.—p. 11.
Plasma-Protein Levels in West Africans. M. R. Barakat and D. A. Smith.—p. 12.
Tonic Fits and Glycosuria Due to Fat-Embolism. C. A. Rumball.—p. 13.

Ileostomy and Ulcerative Colitis.—Hardy and associates point out that in the treatment of ulcerative colitis, apart from its complications, surgical intervention has one object, to put the colon at complete rest, and this can be done only by ileostomy. Since 1939 ileostomy has been performed 21 times in their hospital with 6 deaths. Two moribund patients were operated on as a measure of last resort and died shortly afterward. Three patients died from intestinal obstruction. One patient collapsed suddenly three weeks after ileostomy and died, probably as a result of sodium depletion. Of the last 9 patients only 1 has died. The authors make a plea for the more frequent use of ileostomy and for its earlier performance. The modern operation of double-ended ileostomy is described together with some improvements in technic. Careful selection of cases is important. Much of the dread of ileostomy has been overcome by the use of a new form of bag, introduced a few years ago in America and known there as the Koenig-Rutzen bag. The authors use a modification of this bag. It is attached to the skin by a latex fixative. Patients must be thoroughly prepared, psychologically and dietetically, and their sodium balance must be carefully maintained after operation. Ileostomy controlled by the new form of bag permits an early return to almost full activity.

English Male Toads in Pregnancy Tests.—Klopper and Frank state that Galli Mainini's work was repeated in Britain by Haines on imported specimens of Bufo arenarum. His results were so encouraging that a search for Old World toads suitable for the test was made. Good results were obtained with the common English toad, Bufo vulgaris. The authors present an analysis of the results they have obtained with these animals. The results were positive in 51 of 101 tests and negative in 50. The 51 positive reactions were all shown by the clinical outcome to have been obtained with urine from women who were pregnant at the time of the test. There were thus no false positive results. The negative results were as follows: Control series 14; patients ultimately proved nonpregnant 28, and false negatives 8. This shows a high incidence of false negatives as compared with the results published by Galli Mainini. The test has many advantages over present biologic tests.

Medical Journal of Australia, Sydney

1:761-796 (June 11) 1949. Partial Index

Tuberculous Empyema. A. H. Penington.—p. 769.
Some Aspects of Fluid Therapy in Oto-Laryngology. A. O. Davy.—p. 771.
Some Aspects of Nutrition as Related to Practice of Obstetrics and Gynaecology. E. H. Hipsley.—p. 775.

Practitioner, London

162:437-532 (June) 1949. Partial Index

Food Poisoning. E. T. Conybeare.—p. 437.
Bacteriology of Food Poisoning. G. S. Wilson.—p. 445.
Food Hygiene in Shops and Restaurants. R. Cruickshank.—p. 461.
Treatment of Food Poisoning. S. J. Hartfall.—p. 469.
Domestic Food Poisoning Problem. A. B. Stewart.—p. 477.
Headache. C. Symonds.—p. 481.
Present Status of Treatment of Thyrotoxicosis. W. H. Beierwaltes and C. C. Sturgis.—p. 486.
Early Recognition of Cancer of Rectum. S. O. Aylett.—p. 502.
Penicillin by Subcutaneous Route. D. Wheatley.—p. 508.

South African Medical Journal, Cape Town

23:391-414 (May 21) 1949. Partial Index

*Herniation of Nucleus Pulposus in Lumbar Region. J. G. du Toit.—p. 391.
Malignant Disease: Present-Day Knowledge of Its Cause and Nature. J. F. Murray.—p. 395.
Id.: *Endocrine and Nutritional Aspects.* M. M. Suzman.—p. 401.
Value of Skin Grafts in Surgery of Nose, Throat and Ear. A. J. de Villiers.—p. 409.

Herniation of Nucleus Pulposus in Lumbar Region.—Although some patients with lower back pain with or without sciatica are cured by the removal of nuclear protrusions, it is a mistake to advocate a laminectomy in every patient with sciatica and/or low backache. Excessive enthusiasm must inevitably lead to disillusionment. The unfavorable results in disk surgery reported by some surgeons are due to (1) failure to select patients carefully, and (2) lack of appreciation of the fact that the patient has a 20 per cent chance of having a double disk lesion and, consequently, that removing only one protrusion will not relieve him. Other points are inadequate removal of the pathologic nucleus pulposus with subsequent recurrence and, above all, failure to prescribe proper after-treatment; as long as the erector spinae muscles are weak and atonic the patient will complain of pain, tiredness and weakness of his back. Disk surgery has come to stay as an important advance in the surgical treatment of lower back pain and/or sciatica. A critical assessment of every patient and assiduous attention to detail in treatment and after-treatment are essential if good results are to be hoped for.

Thorax, London

4:73-124 (June) 1949

Reserve Air as Aid in Diagnosis of Emphysema. H. Herxheimer.—p. 73.
*Excision of Lung for Pulmonary Tuberculosis. T. H. Sellors and M. D. Hickey.—p. 82.
Tuberculous Cavities in Apex of Lower Lobe. J. Crofton.—p. 96.
Sterile Serous Effusions in Cases of Lobar Pneumonia Treated with Sulphonamides. R. C. Nairn.—p. 101.
Fracture of Bronchus. J. L. Griffith.—p. 105.
Post-Operative Respiratory Complications: Study of 1,000 Genito-Urinary Cases. K. J. Mann.—p. 110.
Perforations Following Dilatation of Oesophageal Strictures: Report of 3 Cases with Recovery. C. A. Wells, J. H. Hughes, R. Edwards and R. Marcus.—p. 119.

Excision of Lung in Pulmonary Tuberculosis.—Sellors and Hickey review observations on 78 cases in which lobectomy or pneumonectomy was performed in the presence of pulmonary tuberculosis. Twenty-three of the resections were done without realization that tuberculous infection was present. Some of these cases date back ten years and more. Six of these patients died as a consequence of the operation. In 15 of the 23 cases the lobectomy had been done on the basis of a diagnosis of bronchiectasis, in the others tumor was suspected. Deliberate excision for a known tuberculous lesion was undertaken in 55 patients. Fifteen of these excisions were for tuberculoma, with satisfactory results and no fatalities. The remaining 40 resections, with 5 fatalities, were undertaken for pulmonary and bronchial lesions. The authors believe that the prime consideration before excision is undertaken in pulmonary tuberculosis is that other and simpler methods have been tried and have failed. The second is that the residual lung tissue should be free from active disease and able to stand the physiologic strain placed on it. It is practically impossible to make general rules regarding indications for lobectomy or pneumonectomy, since each case presents an individual problem in which anatomic, pathologic and constitutional factors must be considered. Persistent cavities, failures of thoracoplasty, bronchial stricture and "destroyed lung" are some of the indications discussed by the authors.

Transactions Royal Soc. Trop. Med. and Hyg., London

42:511-630 (May) 1949. Partial Index

Epidemiology of Yellow Fever in Central Africa. A. F. Mahaffy.—p. 511.
Filaria in the Anglo-Egyptian Sudan. H. M. Woodman.—p. 543.
Incidence of Schistosomiasis in South Central Africa. M. Gelfand and W. F. Ross.—p. 559.
Observations on Treatment of Falciparum Malaria. R. H. Black.—p. 565.
Note on Presumed Exo-Erythrocytic Development of Plasmodium Vassali in Liver of the Malayan Squirrel. J. W. Field and J. F. B. Edeson. —p. 569.
Rate of Disappearance of Leishmania in Kala-Azar Patients Under Urea Stibamine Therapy. Eutrope A. Ho, Tsung-Hsin Soong and Young Li. —p. 573.

Anales de la Facultad de Ciencias Médicas, Asunción

7:5-70 (Dec.) 1948. Partial Index

*Epidemic Outbreak of Psittacosis in Paraguay. C. M. Ramirez Boettner, A. Canese, A. Adorno and R. Bustamante.—p. 13.

Psittacosis in Paraguay.—Boettner and collaborators describe an epidemic of psittacosis in Paraguay, with 15 cases and 2 deaths. Eight families bought twelve parrots, ten of which died shortly afterward with typical symptoms of psittacosis. The patients were in direct contact either with the parrots or with persons who had been in contact with them. All but 1 of the patients were adults. Ten were women. The course of the disease, which was either acute or subacute, and the respiratory symptoms were typical. The virus was identified in all cases. Of the 6 patients with complications of the nervous system 4 recovered and 2 died in coma. Sulfanilamide given to 5 patients was without effect. Four patients in whom sulfanilamide therapy failed were given penicillin. One patient was almost moribund. The other 3 were given 100,000 units of penicillin daily for two or three days. This therapy gave satisfactory results. In subacute cases the treatment consisted of administration of quinine and calcium gluconate. Good results were obtained.

Fol. Psych. Neurol. et Neuroch. Neerlan., Amsterdam

52:95-182 (April) 1949. Partial Index

*Thallium Poisoning. J. J. G. Prick, L. Muller and W. G. Sillevis Smitt. —p. 95.
Syphilis of Central Nervous System in Java. W. J. C. Verhaart and G. A. van Wieringen-Rauws.—p. 115.
Medullary Syndromes Simulating Multiple Sclerosis, Amyotrophic Lateral Sclerosis, Subacute Combined Degeneration of Cord and Syringomyelia, Caused by Herniation of Intervertebral Cervical Disk. W. A. den Hartog Jager and D. Moffie.—p. 137.

Thallium Poisoning.—Prick and his associates review the various aspects of thallium poisoning and describe observations in 10 cases differentiated into three groups: first, acute cases terminating in death after seven to ten days; second, an acute stage that passing into a chronic stage, the clinical picture of which was milder and sometimes lasted six months or longer, during which time new symptoms manifested themselves, and third, a subacute form lasting from six weeks to three or four months. In the acute form the principal causes of death was respiratory paralysis, accompanied or not by purulent bronchitis or pneumonia, and circulatory disturbances. The prognosis for life became much more favorable if the patient survived the first phase. Loss of hair usually begins between the fourteenth and eighteenth day. Other symptoms include glabrous tongue, cheilosis at the corners of the mouth and brown pigmentation on the backs of the hands. This pigmentation was also seen in the inguinal folds, on the scrotum, and in 1 case over a large expanse of the body. There may be abnormal great toe reflexes, visual disturbances, hypertension, nephritis, pains and swelling in the joints and cerebral disturbances. The authors discuss the pathologic anatomy of thallium poisoning, cite experimental and clinical reports, and describe necropsies on their own patients. Washing out the stomach and the use of laxatives are important in acute cases. Injection of histamine, followed by renewed rinsing of the stomach and the use of diuretics, is also advisable. To render inactive any thallium which might already have begun circulating in the blood 10 cc. of a 10 per cent sodium thiosulfate solution should be administered intravenously. This can be repeated several times a day and should be continued over a period of time. The authors also saw good results from blood transfusions in cases of acute poisoning. Symptomatic measures may be advisable, also large doses of vitamin B_1 and B_2. Rat poison in the form of thallium sulfate is the chief source of thallium poisoning. Since this substance is colorless and tasteless, it may also be used with homicidal or suicidal intent and thus may be of importance in forensic medicine.

Maandschrift voor Kindergeneeskunde, Leyden

17:1-82 (No. 1) 1949

Hypovitaminosis and Hypervitaminosis. A. van Westrienen.—p. 1.
*Chickenpox: Recurrent Attack and Corneoscleral Localization. G. M. H. Veeneklaas.—p. 18.
Werlhof's Disease and Extirpation of Spleen. T. Halbertsma.—p. 21.
Renal Rickets with Signs of Tetany. F. A. Willemijns and Meulemans. —p. 25.

Chickenpox: Recurrent Attack and Corneoscleral Localization.—Veeneklaas says that in January 1946 chickenpox occurred in a neighborhood where there resided a family with 3 children, aged 7 months, 2½ years and 5 years. The youngest child had a typical attack of chickenpox during the second half of January. The two older children had not had the disease and did not contract it at this time. During the first half of March the oldest and the youngest child came in contact with a patient, who the day after the contact showed typical symptoms of chickenpox. The youngest child was vaccinated on March 6, and on March 13 showed two pustules. On March 19 this child again exhibited the classic picture of chickenpox, but most of the crusts had disappeared by March 23. A new crop of chickenpox vesicles appeared on March 27 and again subsided rapidly. On March 25 the oldest child, aged 5 years, had a small ulcer on the inside of the upper lip and on the following day she exhibited an exanthem, fever, otitis media, diffuse conjunctivitis and two vesicles on the back. On March 27, the temperature decreased somewhat, and the exanthem and the conjunctivitis subsided. Paracentesis of the left tympanic membrane yielded pus. A number of vesicles were now visible over the entire body. On the limbus of the cornea, on the median side of the right eye, a vesicle formed and the temperature increased again. Pus discharged from the left ear, and hundreds of vesicles were now distributed over the entire body, including the eyelids. The blister on the cornea and sclera extended further. The chickenpox ran the usual course, but at the rim of the cornea a dull spot persisted and was still noticeable three years later. On April 9 the child aged 2½ contracted chickenpox, and in this instance also a vesicle developed on the limbus of the cornea of the right eye.

Medizinische Klinik, Munich

44:689-720 (June 3) 1949.—Partial Index

*Cutting of Thalamofrontal Tracts in Uncontrollable Pain. V. T. Riechert.—p. 689.
Myositis Ossificans Circumscripta Traumatica After Defective Treatment. V. H. Junge.—p. 692.
*Priapism. H. Haar—p. 696.
How to Treat Perthes' Disease. G. Exner.—p. 708.

Cutting of Thalamofrontal Tracts in Uncontrollable Pain.—The cutting of thalamofrontal tracts for intractable pain has been recently suggested by Freeman and Watts. Riechert so far has employed the procedure in 6 patients. The operation is of value also in types of pain which could not be influenced by surgical measures formerly in use for the control of pain. The author treated successfully 1 patient with anesthesia dolorosa and 2 patients with intractable pain from advanced syringomyelia. The type of pain presented by the patient with anesthesia dolorosa is seen frequently after electrocoagulation of the gasserian ganglion. Pain which was formerly piercing and intermittent often becomes burning, continuous and less bearable. To reduce to a minimum the undesirable effects of the cutting of the thalamofrontal tracts, the author performs the operation with the patient under local anesthesia and if possible during an attack of pain. The patient is urged to describe the effect of the operative procedure on the pain. In a patient with syringomyelia the pains were localized in the neck, shoulders and upper part of the arms. The tracts were severed *first on* the right side, and the patient stated that the pains on the left side had disappeared, whereas on the right side they became more intense and extensive, involving also the hand. Cutting of the tracts on the left side gradually reduced the area of pain, which finally disappeared. The author has gained the impression on the basis of exploratory operations performed with the patient under local anesthesia, that the cutting of a comparatively small portion of the thalamofrontal tracts, chiefly those leading to the median basal orbital port of the brain, is most effective. He also observed that patients who before the operation had been addicted to drugs did not manifest withdrawal symptoms when the drugs were stopped after the operation. The time elapsed since operation is too short to enable the author to state whether the pain has been permanently abolished or may return.

Priapism.—Haar differentiates two forms of priapism: the purely neurofunctional priapism and that which results from disturbances in the local circulation. The first form is observed after irritation of the center of erection or of the nervous channels originating in this center, as in fractures and dislocations of the vertebral column involving compression of the spinal cord; in tuberculosis or tumors of the spinal cord; in tabes dorsalis, and occasionally in diseases of the central nervous system. Priapism of local origin is observed in cavernitis due to gonorrhea, or to phagedenic ulcer of the prepuce; in the presence of neoplasm of the penis, which have invaded the corpora cavernosa, and after trauma with hematoma in the corpora cavernosa. There is also priapism in leukemia, hemophilia, typhoid, tuberculosis, sepsis and acute articular rheumatism. Priapism is often accompanied with unbearable pain, which necessitates morphinization. It may become complicated by gangrene, infection and even sepsis. In the first of the 2 cases discussed by the author the etiologic basis was not clear. The history revealed damage to the lumbar spinal cord from a missile lodged there and later removed. However, it is difficult to explain why priapism did not develop until four years later. Capillaroscopy indicated a disturbance in the peripheral circulation, and this, together with the earlier damage to the lumbar spinal cord with irritation of the center of erection, blood stasis resulting during sleep and pressure from a full bladder on the venous plexus pudendalis, probably brought on the priapism. The second case concerned a youth of 17, who had sustained a fracture and dislocation in the cervical portion of the vertebral column with compression of the cervical spinal cord. As the result of the abolishment of the inhibiting influence of the vasomotor center in the medulla oblongata, which governs the center of erection, a permanent erection resulted; a sort of hyperreflexia seems to be the cause in this patient. Peridural anesthesia interrupted the priapism in this patient.

Nordisk Medicin, Stockholm

41:843-886 (May 13) 1949. Partial Index

*Arteriovenous Aneurysms in Brain. H. Olivecrona.—p. 843.
*Penicillin Treatment in Early Congenital Syphilis Compared with Usual Earlier Treatment. L. E. Carlgren.—p. 846.
Streptomycin Treatment of Hemophilus Influenzae Meningitis. A. Kass.—p. 851.
Importance of Quantitative Tuberculin Test in Diagnosis of Tuberculosis in Children. S. Anttila.—p. 854.
Recrystallized Insulin in Allergy to Insulin. J. E. Jorpes.—p. 856.

Arteriovenous Aneurysms in Brain.—Olivecrona states that in patients with epileptic attacks, especially of the jacksonian type, and history of one or several subarachnoid hemorrhages, the diagnosis of arteriovenous aneurysm is practically certain. A systolic blowing sound is pathognomic but is a relatively rare symptom. Arteriovenous aneurysms may be suspected in other persons, particularly in subarachnoid and intracerebral hemorrhages in younger persons without hypertension. Arteriography is always indicated when arteriovenous aneurysm is suspected. In treatment the choice lies between removal of the aneurysm and leaving it alone. Experiences with ligature of the carotid artery were discouraging. The aneurysm was extirpated in 47 of the 79 patients treated in the Serafimer Hospital's neurosurgical division from 1923 to 1948, with operative mortality of 8.5 per cent. The aneurysm was removed from 24 of the 42 patients treated from 1936 and from 18 of the 19 treated from 1946 to 1948. Arteriovenous aneurysm may be inoperable because of its site, as in the case of most aneurysms in the posterior fissure and all located in the brain stem, or because of its size. Late results show that 8 of the 24 patients operated on from 1936 to 1946 are well, with full or almost full ability to work. Eight who had defects that in several cases were present before but in some instances were aggravated by operation are able to do limited work; the remaining 5 survivors are invalids. In epilepsy the prognosis is best in younger patients with short anamnesis, unfavorable in inveterate cases.

Penicillin Treatment of Early Congenital Syphilis.—Carlgren's material comprises 31 patients with early congenital syphilis observed from 1945 to 1947 and treated with penicillin, with 4 deaths, and 31 patients from 1934 to 1945 treated with arsenic and bismuth compounds, with 11 deaths. The two groups are comparable with regard to gravity of infection. The author finds that penicillin treatment is not only equal but in certain respects superior to the arsenic and bismuth treatment. In patients given penicillin the mortality was considerably lower. The clinical symptoms disappeared at least equally fast, the general condition seemed more rapidly to be influenced favorably, the side effects were fewer, seronegativity was attained in shorter time, and recurrence was less frequent. Penicillin is a valuable prophylactic agent against intercurrent infections. The penicillin dosage applied was as a rule lower than that ordinarily recommended. The results indicate that relatively low doses suffice. Although in many instances one series of penicillin injections seemed to be sufficient, continued treatment till seronegativity is attained is advised because of the uncertainty as to recurrence.

41:975-1018 (June 3) 1949. Partial Index

*Potassium Solutions: Indication and Lines of Guidance in Treatment of Intracellular Potassium Deficiency. O. J. Malm.—p. 975.
Normal Value of Serum Copper in Man. G. R. Wallgren.—p. 985.
*Tumors of Sweat Glands in Vulva. H. Brattström.—p. 987.
**Prostatectomy According to Millin.* H. Ekman.—p. 990.
Facial Edema in Codeine Poisoning. M. Hertz.—p. 992.
Treatment of Gastric Ulcer with Gynergen. H. Öigaard.—p. 993.
Peritoneal Irrigation in Anuria. E. Bonge and H. Veflingstad.—p. 995.
Bronchial Asthma Due to Chromium Trioxide. C. Broch.—p. 996.

Potassium Solutions. Indications and Treatment of Intracellular Potassium Deficiency.—Malm says that the theoretic basis for potassium therapy is the knowledge of the intracellular potassium deficiency which accompanies grave conditions of dehydration whether connected with acidosis, as in diarrheas and diabetic acidosis, or with alkalosis and pyloric stenosis. The indication for potassium treatment is severe dehydration. Infectious enteritis in which all fluids must be administered parenterally for several days and diabetic coma are important and indicative. In cases of familial periodic paralysis the low serum potassium level during the attacks can be relieved promptly by administration of potassium. There are also cases of chronic nephritis with low serum potassium levels and paralyses which should be treated with potassium. It is important to know that normal or increased serum potassium determinations may be seen in patients with grave potassium deficiency in the organism; the increased serum potassium can in such cases be considered as proceeding from the cells to the kidneys for elimination. With potassium deficiency in the cells, pronounced asthenia with muscular weakness, hypotonia of the skeletal musculature and signs of myocardial weakness are an indication for potassium administration by the mouth or parenterally according to Darrow. Darrow's potassium solutions are described, and detailed directions are given for oral and parenteral administration.

Sweat Gland Tumors in Vulva.—Brattström describes 10 cases of hidradenoma in the vulva, with histologic structure varying from intracystic papilloma to massive adenoma, 2 cases of hidradenocarcinoma and 1 case of sweat gland tumor of mixed type. A histogenetic classification of sweat gland tumors can hardly be made. In the 2 cases of malignant sweat gland tumors in the vulva the nature of the tumor was revealed by the histologic structure, and in the second case also by the occurrence of metastases. Because of the three year duration in this case it is thought that the tumor may have originated as a hidradenoma, but histologic examination failed to show any remains of hidradenoma. The last case presented histologically all the characteristics of sweat gland tumors of so-called mixed type. Such tumors are regarded as epithelial, and the structures found in them are believed to be mainly a transformation product of the epithelial cells and their secretion and also of the connective tissue normally found in the gland.

Prostatectomy According to Millin.—Ekman states that retropubic prostatectomy was performed in 51 cases in the Sahlgren Hospital during the past year, with 4 deaths, 2 from pulmonary embolism. He considers Millin's operation particularly useful in patients with large adenomas but with uninfected urinary tract. In obese patients with a relatively small prostate the method may present difficulties; occasionally in such cases transvesical prostatectomy is performed. A number of complications occurred, including pubic osteitis in 3 instances, but Ekman believes that with greater experience both as to indication and operative technic improvement in the results will follow. With this method a larger number of patients with prostatic hypertrophy can be treated surgically than was possible formerly, and the postoperative course is more comfortable.

Praxis, Bern

38:577-596 (June 30) 1949

*Surgical Treatment of Paralysis of Facial Nerve. H. Koechlin.—p. 577.
Failures in Myelography. R. H. von Muralt.—p. 587.

Surgical Treatment of Facial Paralysis.—According to Koechlin, in cases of recent paralysis of the facial nerve one should always attempt end to end suturing. If this is not feasible one may use nerve grafts taken from the cutaneous femoris lateralis nerve. In cases of long duration or in cases of intracranial or inaccessible lesions the majority of surgeons refrain from nerve anastomoses because of disappointing results. Superior cervical ganglionectomy may be attempted occasionally for ocular disturbances in certain cases. The occlusion of the eyelids may be improved by the production of Horner's syndrome. Autoplasty using strips of fascia lata is the method of choice. In some cases there may be considerable excess skin due to the distention of the aponeurotic tissues; this excess skin should be excised. In addition a myoplasty may be performed in an occasional instance, but the author does not consider the last-mentioned procedure as essential. Myoplasty alone proved insufficient, particularly in cases of long duration.

Presse Médicale, Paris

57:535-566 (June 15) 1949. **Partial Index**

Radiologic Anatomy and Interpretation of Angiocardiography. E. Donzelot, R. Heim de Balsac, A. M. Emam-Zade and J. E. Escalle.—p. 535.
Streptomycin Associated with Pneumothorax in Early Treatment of Fibrocaseous Pulmonary Tuberculosis in Adults. C. Mattei, M. Tristani, P. Balozet and C. Mattei.—p. 537.
*Causes of Failure of Adrenalectomy and of Ganglionectomy in Thromboangiitis, Based on 898 Surgically Treated Patients. R. Leriche.—p. 539.

Adrenalectomy and Ganglionectomy in Thromboangiitis.—Leriche performed 800 ganglionectomies with or without splanchnicectomy, and 98 adrenalectomies for thromboangiitis since 1925. Highly satisfactory results may be obtained with bilateral ganglionectomy alone or adrenalectomy alone or with bilateral ganglionectomy combined with adrenalectomy on one side and splanchnicectomy on the other. Three causes may vitiate the result of ganglionectomy and of adrenalectomy, whether employed as a single or a combined operation. The presence of infected ulcers at the anterior part of the foot, of a large necrotic plaque at the dorsum of the foot from ischemic infarction, or of infarctoid nummular plaques at the heel should be treated before or at the end of the vasodilating intervention. Mechanical cleansing will prevent failure of the vasodilating operation. Failure of the reutilization of the main vessel and of its permeability below the thrombosis at a distance from the first appearance of the obliteration may be another cause of failure of the operation, but one for which there is no remedy. Arteriography is a reliable means of determining in advance the functional prognosis of the vasodilating operations by demonstrating the seat and the physiologic consequences of the thromboangiitis. Occasionally there may be a third cause of failure, i. e., simultaneous arterial and venous thrombosis. In cases of this type nothing will prevent the occurrence of gangrene. The only objective of ganglionectomy then may be to limit the gangrene by suppressing the vasoconstrictor phenomena at the border of the dead tissues.

Revista Clínica Española, Madrid

32:373-432 (March 31) 1949. **Partial Index**

*Paradoxes in Clinical and Pathogenetic Problems of Jaundice. C. Jiménez Diaz, H. Castro Mendoza and E. Dominguez Dominguez-Adame.—p. 385.

Pathogenesis of Jaundice.—Jiménez Díaz and collaborators found that cholemia in normal persons consists of both the direct and indirect fractions of bilirubin. In 3 per cent of the cases studied by them normal cholemia consisted only of the direct fraction. Bilirubin is never encountered in normal urine, in the urine of patients with direct hypercholemia, in hemolytic acholuric jaundice, and in the urine of patients with nephritis. The indirect fraction of bilirubin is present in the urine of patients with choluric jaundice. Direct cholemia is high in patients with acute atrophy of the liver, regardless of the acuteness of parenchymal destruction. Acute hepatitis may proceed to fatal termination without jaundice. The authors found at necropsy on patients with acute atrophy of the liver with and without jaundice that jaundice was related to the presence of both edema of the liver and nodules of regeneration about the portal spaces. They conclude that the transformation of the indirect fraction of bilirubin into the direct fraction is performed by the kidney and not by the liver, as has been previously believed. The main causal factors of jaundice are edema of the liver and obstruction of the biliary capillaries from compression of nodules.

Revista Médica de Rosario

39:1-38 (Jan.) 1949. **Partial Index**

Considerations About Continuous Spinal Anesthesia. A. E. Favalli.—p. 3.
*Hematologic Study of Patients with Leprosy After Treatment with Diasone. J. M. M. Fernández, P. Tommasino, E. A. Carboni and M. M. Giménez.—p. 10.

Hematologic Studies in Leprosy.—Diasone® (disodium formaldehyde sulfoxylate diaminodiphenylsulfone) given largely in the treatment of leprosy sometimes acts as a hemolytic poison. The resulting anemia usually is mild, does not make it necessary to interrupt the treatment and responds to iron, liver and vitamins of the B complex.

Revista Médica de Valparaiso

2:63-132 (May) 1949. **Partial Index**

*Scheme for Intensive Six Day Treatment of Recently Acquired Syphilis. H. Vicuña M. and A. Lopez M. C.—p. 63.
Considerations About Symptomatology of Acute Vascular Accidents of Encephalon. A. Robinson N.—p. 90.
Radiologic Studies of Rheumatoid Arthritis. E. Zarate V., W. E. Koch and H. Arellano C.—p. 110.

Treatment of Recently Acquired Syphilis.—The results of intensive treatment in 200 cases of recent syphilis are given. The treatment consisted of 0.36 to 0.48 Gm. of arsenoxide, 2.40 Gm. of bismuth, 600,000 units of penicillin and three pyretogenic injections in six days. The only serious accidents were 2 cases of arsenical encephalopathy, 1 patient died and the other recovered. The effect on the lesions and on the serologic reaction and on the evidence of reinfection demonstrated favorable results in more than 90 per cent of the treated patients.

Rivista di Malariologia, Rome

38:61-124 (April) 1949. **Partial Index**

*Anatomicopathologic Aspects of Acute Experimental Poisoning with DDT: Especially on the Nervous System. R. Virgili and G. Marchiafava—p. 107.

Experimental Poisoning with DDT.—*Virgili* and Marchiafava established in experiments on guinea pigs, rabbits and cats that the central nervous system is greatly damaged by DDT poisoning. The lesions are those of *chromatolysis*, vacuolization, pyknotic changes, cellular destruction, neuronophagia, changes in the neuroglia, the cerebellum and the cortex and damage to the cells of the anterior horns. The pontobulbar region is the most seriously damaged. The severity and distribution of the changes in the central nervous system explain the acute neurologic symptoms which are commonly observed in animals poisoned with DDT, as well as the respiratory paralysis which is the usual cause of death from this poison.

Rivista di Neurologia, Bologna

19:1-144 (Jan.-Feb.) 1949. **Partial Index**

*Postvaccinal Encephalomyelitis in Adults: Nosographic Position as Demyelinating Disease. S. Rigotti.—p. 1.

Postvaccinal Encephalomyelitis.—In 1945, when smallpox vaccination of adults was obligatory in the Province of Padua, Rigotti observed 2 cases of postvaccinal encephalomyelitis. The neurologic symptoms in adults differ from those in children. From an extensive review of the literature and from his own observations he concludes that smallpox postvaccinal encephalomyelitis in adults is diffusely disseminated in the brain and in the spinal cord. The disease follows a chronic course similar to that of multiple sclerosis. The disease is a demyelinating dysergia of the nervous system. In the establishment of dysergia of the nervous system, the age of the patient is a factor of importance. The most important dysergic nervous factor, however, is the effect of a previously administered smallpox vaccine.

Schweizerische medizinische Wochenschrift, Basel

79:533-564 (June 18) 1949. **Partial Index**

*Our Experiences with Operative Treatment of Carcinoma of Bronchi. A. Brunner.—p. 533.
Operative Treatment of Carcinoma of the Esophagus. P. Decker.—p. 535.
Treatment of Cancer of the Breast. A. Jentzer and R. Clerc.—p. 537.
Beginnings of Chemotherapy for Neoplastic Diseases. L. Heilmeyer.—p. 539.
*Multiple Possibilities of Application of Long-Living Artificial Radioactive Isotopes (Co^{60}) in Liquid Form for Irradiation Therapy of Malignant Tumors. J. H. Müller.—p. 547.

Bronchial Carcinoma.—Brunner operated on 26 patients with carcinoma of the bronchi. Pneumonectomy was performed on 22 with 4 operative deaths and lobectomy in 4 with 1 operative death. The mortality rate of 19 per cent seems moderate in view of the liberal indications to give the patient a last chance. Four patients were over 60 years of age, and the oldest was 68. Six of the 21 surviving patients died from recurrence or metastasis. The first 2 patients on whom pneumonectomy was performed in 1946 were in good health at the time of writing. The author agrees with American and English workers that the operative prognosis is not bad in patients who do not present metastasis in their lymph nodes. Exploratory thoracotomy should be practiced as little as possible, since ineffective intervention may shake the confidence in surgical treatment. Bronchoscopy will fail in peripheral tumors the incidence of which is relatively high. Early diagnosis of tumors of this type may be facilitated by bronchographic examination aided by a water-soluble contrast medium.

Long-Living Artificial Radioactive Isotopes as a Means of Irradiation Therapy.—Müller presents a preliminary report on a new technic which utilizes long-living artificial radioactive isotopes for irradiation therapy. Radiocobalt (Co^{60}), the half-life of which is 5.3 years, has been employed in liquid form in a radiocobalt chlorine solution. Sodium iodide has been added as a contrast medium. The radioactive solutions are measured by means of an ionization chamber in order to determine the effective radium-equivalence. The spacial distribution of gamma radiation was determined with radioautographs. The clinical application of the radiocobalt solution is performed by means of suitable rubber balloons. This procedure may be employed safely because Co^{60}, in contrast to radium, does not emanate. Co^{60} actually emits a practically monochromatic gamma radiation of high, medium energy and only a soft beta radiation; the latter is readily absorbed by thinnest material layers. An empty rubber balloon mounted on a permanent catheter may be introduced without difficulty into the urinary bladder and may then be filled "in situ" with 60 cc. of the radiocobalt solution. After the administration of the appropriate irradiation dose the balloon can be evacuated and removed easily by the urethral route. This filling method seems definitely promising for increasing substantially the radiotherapeutic possibilities in grave cases of cancer of the bladder and of the prostate. The same method may be suitable for all areas of the body, especially cavities which are accessible through relatively narrow natural or artificially produced passages.

Schweizerische Zeitschrift für Tuberkulose, Basel

6:137-208 (Nr. 3) 1949. **Partial Index**

*Pyelitis Caseosa, an Early Form of Exudative Renal Tuberculosis. H. U. Gloor and E. Uehlinger.—p. 137.
Oleothorax as an Extrapleural Surgical Collapse Therapy. R. Wipf.—p. 167.
Inverse Movement of Level of Liquid in Hydropneumothorax as Sign of Adhesions at Base of Lung. G. Rossel and J. J. Berthet.—p. 181.
Tomography in Tuberculous Spondylitis. E. Sommer.—p. 189.

Pyelitis Caseosa an Early Form of Exudative Tuberculosis.—Gloor and Uehlinger say that although pyelitis caseosa is not frequent, it deserves special attention, because from the clinical as well as from the prognostic point of view it is a strictly defined manifestation of urogenital tuberculosis. They present the histories of 5 patients with this lesion. The first case was that of a soldier aged 25 who had a primary pulmonary tuberculous infection. Four months later there was hematogenous dissemination. The patient died following an intercurrent attack of appendicitis two and one-half years after the primary infection. Necropsy revealed a late primary infection with hematogenous dissemination in the pulmonary apexes, pleura, peritoneum and urinary system. All these foci were of the same age. The clinical record indicated only a single hematogenous dissemination about four months after the primary infection. Thus the age of the hematogenous metastases, inclusive of the pyelitis caseosa, is slightly over two years. Pyelitis caseosa is a form of renal tuberculosis characterized by uniform caseation of the mucous membranes of the pelvis of one or both kidneys, without massive destruction of the renal parenchyma. In the same manner the mucous membranes of the ureters, the bladder and the seminal vesicles may undergo massive necrosis. Pathogenetically, pyelitis caseosa belongs to the group of early hematogenous metastases in late primary tuberculous infection. Biologically it belongs to the Arthus phenomenon. The prognosis is grave. Streptomycin therapy is indicated, but operation must be deferred until after stabilization of the tuberculous infection.

Semana Médica, Buenos Aires

56:669-712 (May 19) 1949. **Partial Index**

*Essential Hypertension and the Bilateral Renal Decapsulation. C. F. Cárrega Casaffousth and J. S. Cattaneo.—p. 669.
Contribution to the Biologic Treatment of Diabetes: Blood-Sugar-Lowering Action of Penicillin. L. G. Gret.—p. 677.
Hormonal Local Stimulation of Vaginal Mucous Membrane. C. A. Colotta.—p. 689.

Hypertension and Renal Decapsulation.—Bilateral renal decapsultation in 4 cases of essential hypertension produced permanent normalization of the blood pressure and disappearance of the subjective symptoms in 3 cases. Temporary normalization of the blood pressure and permanent relief from the subjective symptoms occurred in 1 case.

Ugeskrift for Laeger, Copenhagen

111:521-546 (May 12) 1949

*Laboratory Diagnosis of Virus Diseases. M. Volkert.—p. 521.
Eye Diseases in Greenland (Thule, Upernavik and Kutdligssat). E. Skeller.—p. 529.

Laboratory Diagnosis of Virus Diseases.—Volkert states that virus diseases in which the laboratory can aid the clinic in exact diagnosis are infections of the respiratory tract, infections of the central nervous system, virus diseases with cutaneous manifestations and virus diseases in other organs. He stresses that isolation and cultivation of a virus require considerable time, often weeks, and that specific antibodies in the patient's blood do not appear in demonstrable amounts till late in the disease. Therefore the diagnosis will in most cases be retrospective and of only limited value in the treatment of the individual patient. In the most important virus diseases known to occur in Denmark, namely influenza A, influenza B, psittacosis, primary atypical pneumonia, parotitis and venereal lymphogranuloma, serologic diagnosis is a routine procedure in the State Serum Institute.

Book Notices

George R. Minot Symposium on Hematology. William Dameshek, M.D., and F. H. L. Taylor, Ph.D., editors. [Reprinted from Blood, the Journal of Hematology.] Cloth. Price, $12. Pp. 984, with illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

This book is a "Festshrift" published in honor of Dr. George Richards Minot. Papers presented were written for the most part by his colleagues, co-workers and former associates. Several of the manuscripts have been translated from foreign languages. The eighty odd articles presented have been already published in the regular issues of *Blood* from January 1948 through February 1949. Articles have been assembled, as far as possible, in groups of related subjects, beginning with pernicious anemia, the investigation and treatment of which brought Dr. Minot world renown. The collected articles of this symposium offer a wealth of information to all medical men with a distinct interest in hematology, and the volume is a "must" for all hematologists.

The Adrenal Gland. By Frank A. Hartman, Ph.D., Research Professor of Physiology, the Ohio State University, and Katharine A. Brownell, Ph.D., Instructor in Physiology, the Ohio State University, Columbus, Ohio. Cloth. Price, $12. Pp. 581, with 72 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

The book by Hartman, who has devoted more than thirty years of research to the study of the adrenals, and of his collaborator, Brownell, is the most complete monograph on the adrenal gland today. It deals equally well with the anatomic (including the comparative anatomy), pharmacologic (including methods of assay), clinical, and particularly physiologic aspects of the problem. The style is clear and simple; the general arrangement is logical, and each chapter is followed by a precise summary. The book is provided with an index of about 3,500 authors and an equally extensive subject index. The authors do not emphasize their own opinion but report objectively. The book is unquestionably one of the most valuable additions to physiologic and clinical literature. The work is dedicated to the memory of W. B. Cannon and is worthy of it. Printing and binding are excellent.

The Lattice Window. By Frederic R. Stearns. Cloth. Price, $4. Pp. 236. The Dunne Press, 900 Baxter Ave., Louisville, Ky., 1948.

This novel portrays a period of history in a small town in Belgium during which the foundation and decay of a medieval university takes place. A psychiatrist, scion of an old Belgian family, converts the university into a mental hospital. The attitudes of the psychiatrist toward mental diseases are demonstrated to contain elements of a degenerative nature ascribed to decendants of old families. Environmental traditions, the acute hostilities of the townspeople and interreactions of the insane population of the hospital is vividly represented. The psychiatrist himself, unable to withstand the impact of the total problem, subsequently becomes insane.

The novel primarily features the timelessness of the problem of mental disease as it has permeated human cultural history through the ages. It is enjoyable, though not easy reading, and does not offer pat solutions.

Problems of Early Infancy. Edited by Milton J. E. Senn, M.D., Departments of Pediatrics and Psychiatry, Yale University School of Medicine, New Haven, Conn. Transactions of the Second Conference March 1-2, 1948, New York, N. Y. With Supplement Covering Special Meeting, July 18-19, 1947, New York, N. Y. Paper. Price, $1. Pp. 120, with illustrations. Josiah Macy, Jr., Foundation, 565 Park Ave., New York 21, [n.d.].

The conference reported in this monograph was sponsored and conducted by the Josiah Macy Jr. Foundation, which offers an opportunity for a group of approximately twenty-five investigators, representing, in so far as possible, all the branches of science which bear on a chosen medical or health problem to meet for a series of two day conferences. At this meeting the following papers were presented:

"An Introduction to the Discussion of the Psychological Problems of Pregnancy," by Helene Deutsch; "Summary Abstract of Three Publications by L. W. Sontag," by Sibylle Escalona; "Emotional Factors in Early Pregnancy," by John Parks; "Emotion in Pregnancy and Labor as Related to Natural Childbirth," by Frederick W. Goodrich; "Mental State of Women in Pregnancy and How That State Affects the Child in a Psychosomatic Sense," by Blackwell Sawyer; "Clinical Experiences and Observations on the Use of Relaxation Methods in Obstetrical Practice," by Albert M. Vollmer; "Fear, an Important Factor in Obstetrical Problems," by Howard Walser; "Some Clinical Observations on the Influence of Emotions in Pregnancy," by Howard Walser; "Myelinization of the Central Nervous System in Relation to Function," by Margaret A. Kennard; "A Memorandum on Emotional Disorganization in This Culture," by James Clark Moloney, and "Modern Nurseries New Designs," by Preston A. McLendon.

The monograph also contains a supplement of the special meeting held July 18-19, 1947. At this meeting, the following papers were read: "Troubles with Children in Wartime," by Ernst Freudenberg; "The Influence of War Conditions upon Emotional Behavior and Psychosomatic Symptoms in Children as Observed in Holland," by S. Van Creveld; "Postwar Neurotic Conditions of the Children of France," by Serge Lebovici; "Pediatrics for All," by Sture Siwe, and "My Impressions of a Trip Abroad," by David Levy.

Since everyone who read a paper at these two conferences is an authority in his or her field, it is easy to understand why this small book contains a good deal of worth while data. The book should be read by pediatricians, obstetricians, psychiatrists, psychologists and all others who are interested in human development and the welfare of women and children.

Introduction to Radiochemistry By Gerhart Friedlander, Chemist, Brookhaven National Laboratory, Upton, Long Island, N. Y., and Joseph W. Kennedy, Professor of Chemistry, Washington University, St. Louis, Mo. Cloth. Price, $5. Pp. 412, with illustrations. John Wiley & Sons, Inc., 440 4th Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, 1949.

This book is a teaching text for chemists. Considerable background in chemistry, calculus and newtonian and relativistic physics is necessary to appreciate fully the scope of this volume. Nevertheless, the authors have written the text in a lucid style that enables one with only a nodding acquaintance with higher mathematics to appreciate the principles set forth.

Throughout the book the historical approach is used to introduce a subject. This lends interest to the discussion and ties the new material to the basic knowledge of the student. The subject of radiochemistry is introduced with a discussion of the three principal naturally occurring radioactive series of substances. A discussion of atomic and nuclear structure is followed by an excellent treatment of nuclear reactions. Sources of bombarding particles, such as alpha particles, electrons, neutrons and gamma radiations and their properties are discussed.

The quantitative treatment of nuclear reactions receives attention, and it is here that a thorough knowledge of differential equations is necessary for complete understanding of the subject.

In the discussion of the interaction of radiation with matter, the basic principles are presented but not the biological applications other than mention of the systems of measurement applicable to biologic material. However, the student, after having grasped these principles, can easily make his own applications.

Instrumentation is thoroughly discussed, as are the technics for measurement and study of radiations. Interesting are the many applications of statistical technics to the study of radiochemistry and nuclear reactions. The statistical notation used may be somewhat unfamiliar to those accustomed to biologic statistics.

Tracer technics are discussed briefly in the last chapter, but, as the authors point out in the preface, this volume is intended to provide a proper background for those interested in tracer work, and this subject is not within the scope of the book.

The giving of definitions as each new concept is introduced is a valuable pedagogic tool employed effectively by the authors. The inclusion of problems and exercises at the end of each chapter is also helpful to the student.

This book can be recommended as a textbook for senior or graduate students in chemistry but is too advanced for most medical students unless their premedical education included more chemistry, physics and mathematics than is usual in the crowded curriculum.

Rapid Microchemical Methods for Blood and C S F Examinations. By F. Rappaport, Ph.D., Laboratory Director of the Biochemical and Serological Department of the Bellinson Hospital, Pitach Tiqva, Israel. With a Foreword by F. Silberstein, M.D. Cloth. Price, $8.75. Pp. 401, with 72 illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

The author's book, "Mikrochemie des Blutes," published in Vienna in 1935, was entirely sold out in two years. This new book has been produced from the experience gained from the earlier work. Additional methods largely developed by the author are now included, and with a change to a different language this is not in any sense a second edition. There are thirteen chapters and an appendix. The subjects covered are determinations of the general and physical qualities of blood; blood gas analysis; determinations of anions, kations, nonprotein nitrogen and its fractions, proteins and protein fractions, carbohydrates and their derivatives, ketobodies and polyvalent alcohols, fats and lipids, bile pigments and tests of hepatic function, enzymes, vitamins, sulfonamide drugs, para-aminobenzoic acid and thiocyanate. The appendix deals with solutions and apparatus. The brief chapter on vitamins deals with a method for determination of ascorbic acid, and the balance of the chapter is on prothrombin determination. Micromethods are not for the most part simple, nor are they adapted to the small office laboratory. They are useful in pediatrics or in a practice where repeated examinations make it desirable not to withdraw large quantities of blood by venipuncture. However, extreme care in technic is the first requisite in such procedures. The author has illustrated by clear line drawings interesting pipets, burets and other pieces of apparatus to be used in his micromethods. As a work of reference, this book will find a place in the library of the clinical pathologist. In time some of the author's methods may become standard.

Standing and Sitting Posture with Special Reference to the Construction of Chairs. By Bengt Åkerblom. Translated by Ann Synge. Paper. Pp. 187, with 81 illustrations. A.-B. Nordiska Bokhandeln, Stockholm, 1948.

Chapter 1 is largely devoted to the history of research and opinions on those parts of the skeletal system which are involved in the upright position. Chapter 2 relates to the sitting posture and chairs. The principal discussion is concerned with the importance of the height of the chair bottom from the floor in order that there will not be undue pressure on the thigh muscles which may result in fatigue. It also considers the slope of the bottom and the position of the back rest, which is applied to the weakest part of the spine. Chapter 3 is concerned with the function of the ligaments which limit forward flexion instead of the muscles. One wonders about the part that the fascial structures of the spine play in forward limitations.

In chapter 7 there is an experiment showing the relation of the feet to the standing posture. On page 94, in the last line of the fifth paragraph, is stated: "As the experimental subjects wore shoes in everyday life it seemed most suitable to me that the shoes should be on during the tests. For the sake of uniformity only low-heeled shoes were allowed." This experiment would be worthless to those who have high arches and loss of passive dorsal flexion, since these persons pronate with no or low heels. There is, however, a great deal of interest in this little volume and should stimulate further investigation. It is, of course, not possible to design a single model chair for all occupations and pleasures. The author states a well known fact, that change of position is restful.

Medical Latin. By Carolyn Lewis. Cloth. Price, $2. Pp. 135. Marshall Jones Company, Francestown, N. H., 1948.

This syllabus was organized for prospective students of medicine who find academic Latin a stumbling block instead of the stepping stone it could be if a review course simplified to certain fundamentals were available. Only that portion of Latin grammar essential to interpretation of terms which premedical students and nurses will meet in lectures, textbooks and laboratory work is presented. Several Greek roots, prefixes and suffixes are also included, with their meanings and use illustrated. The volume should be most useful to student nurses and medical students who desire a quick review of pertinent Latin grammar as an aid in medical studies.

The Fundamentals of Pulmonary Tuberculosis and Its Complications for the Student, the Teacher, and the Practicing Physician. Editor: Edward W. Hayes, M.D. Editorial Committee: Andrew L. Banyal, M.D., Herman Hilleboe, M.D., J. Arthur Myers, M.D., and J. Winthrop Peabody, M.D. Sponsored by the American College of Chest Physicians. Cloth. Price, $9.50. Pp. 480, with 79 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Basil Blackwell & Mott, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1949.

This book consists of twenty-six chapters prepared by twenty-seven physicians. It is characterized by the omission of theoretical and controversial material. Thus, it is a clear and concise statement of well established facts concerning the cause, diagnosis, treatment and prevention of tuberculosis. The disease is presented from the time tubercle bacilli first invade the human body through the earliest detectable pathologic processes and through the various stages of evolution until the body dies from tuberculosis or its complications. The chapter on bacteriology and pathology clearly and concisely presents the various stages in the development of the disease. It is profusely illustrated with microscopic sections, gross specimens and roentgen shadows which they cast. In 40 pages the student and practitioner find all of the essential and practical information necessary on the pathology of tuberculosis. In a chapter entitled, "The Role of the Bronchial Tree in the Pathogenesis of Pulmonary Tuberculosis," such subjects as physical obstruction, developmental anomalies, localization of lesions, drainage mechanism, emphysema and atelectasis are presented. The body's defense mechanism is discussed in considerable detail with reference to its ability to control tubercle bacilli over long periods, often throughout the normal span of life. Various methods of aiding the defense mechanism are presented.

The importance of diagnosing tuberculosis as soon as possible after tubercle bacilli invade the tissues is emphasized. For this it is emphasized that the tuberculin test is the only valuable diagnostic technic. When gross lesions develop, roentgenologic, bronchoscopic, bacteriologic and other studies are given their proper place.

The chapter on the diagnosis of the reinfection type of the disease, as well as the one on differential diagnosis, contains all the information that the physician needs to determine accurately the presence or absence of tuberculosis. Twenty-two nontuberculous pulmonary diseases are described, with methods of differentiation from pulmonary tuberculosis. The importance of accuracy in diagnosis receives the emphasis it deserves. An excellent chapter is devoted to the classification of the reinfection type of pulmonary tuberculosis. Questions which so frequently confuse students and physicians are answered in less than 20 pages.

Treatment of the reinfection type of pulmonary tuberculosis is presented in chapters on general, antibacterial and collapse therapy in all their aspects. An excellent chapter is included on psychosomatic aspects of tuberculosis, a subject which has been so often overlooked in the treatment of this disease. The commoner extrathoracic tubercular complications with diagnosis and treatment are presented in excellent chapters on tuberculous enterocolitis and tuberculosis of the genitourinary system, and one chapter is devoted to other complications, including peritonitis, tuberculosis of the bones and joints, the skin and the eye. In other chapters tuberculosis of the larynx, trachea and bronchi are well presented.

The relationship of tuberculosis and silicosis occupies a chapter, with a modern viewpoint which renders obsolete much that was formerly taught. One chapter is devoted to tuberculosis and diabetes, another to pregnancy and tuberculosis. The management of persons with these conditions is presented so as to include the most modern and effective measures. Public health aspects of the control of tuberculosis are well outlined and described. The last chapter is devoted to the prognosis of tuberculosis, in which the important factors are enumerated and discussed.

A list of approximately a hundred books on the various phases of pulmonary tuberculosis and other chronic diseases of the lungs is recommended as supplementary reading material. An excellent index is included.

The format is ideal. The size of type, clarity of illustrations and quality of paper reflect the careful attention the publisher gave to the production of this volume. This book of 480 pages with 182 illustrations can be highly recommended to all senior medical students, teachers and practicing physicians.

The Physique of Young Adult Males. By W. J. Martin. Medical Research Council Memorandum No. 20. Paper. Price, 1s.3d. Pp. 66. His Majesty's Stationery Office, York House, Kingsway, London, W.C.2. 1949.

A statistical analysis of material from the records of the medical examinations given prior to the outbreak of war to the approximately 91,000 young men between the ages of 20 and 21 who were resident in Great Britain is made available in this report. Dr. Martin has analyzed the height, weight, chest circumference, medical grade and visual data furnished by those records and has made comparisons between those residing in urban and rural areas and also among those residing in fifteen different regions of the country.

Mean values, standard deviations and distribution tables are provided to illustrate the material which those examinations yielded. Mean heights, weights and chest circumferences are given for the whole country, for rural, county and urban districts and for each of the fifteen districts into which the country was divided. The results of visual examinations and the medical grade to which each man was assigned was similarly treated.

It is stated that the material "has been displayed so as to illuminate, whenever justifiable, questions of broad social interest and, in view of the pessimism excited by a report of the Ministry of National Service after the first world war, it should be said at once that the conclusions to be drawn from the present, while wholly unsensational, are within their limits encouraging." The limitations of the data are obvious and are readily admitted by the author. There is no analysis of the disabilities which placed the men in categories which disqualified them: it would seem that an assessment of the nation's health would be better based on such material than on height, weight and visual data.

This report will be of value to those interested in the values of these measurements, the visual findings and the medical grading of a large number of young men. The tables are well presented and obviously carefully prepared.

The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man. By Kurt Goldstein, M.D., Columbia University, New York. [Reprint.] With a foreword by K. S. Lashley, Harvard University, Boston. American Psychology Series. Henry E. Garrett, general editor. Cloth. Price, $5. Pp. 533. American Book Company, 88 Lexington Ave., New York 16, 1939.

This volume is primarily addressed to the student of biologic sciences who is familiar with the technicalities of problems centering around the attainment of an adequate understanding of total organismic behavior. The book is a translation of the German original with minor changes and a sharpening of the focus on fundamental problems and principles. The method of approach reverses previous attempts at understanding higher organisms by examination of lower organisms. Man is made the point of departure in this study. This approach is based on the stated questionable validity of the "concept of simplicity." The author states that often the so-called simpler biologic performances are found to be abstractions and that the so-called simple can be as obscure as the complex. Pathologic data rather than normal physiologic phenomena are interpreted.

Discussions include clarifications of reflex functioning, instinctual drives, the conscious and the unconscious and concepts of heredity and breeding. Chapters on preferred behavior and Gestalt psychology, with reference to good and bad Gestalten, are intriguing.

Perhaps a possible fault of this treatise is the author's attempt to provide understanding of all organismic processes by intellectualization of objective facts. It denies psychologic law equal validity with biologic law and thus appears, in part at least, to deny holistic concepts. Nevertheless, the material presented is extremely thought provoking and of importance to all branches of natural science concerned with the integration of vital functions.

Heilung durch Hypnose. Von Dr. Lothar Fresacher. Paper. Price, $1.20. Pp. 45. Wilhelm Maudrich, Spitalgasse 1B, Vienna IX, 1949.

The author writes in a clinical rather than theoretical vein, maintaining that the value of hypnotic therapy is generally underestimated; that with the aid of sedatives it can be applied to 90 per cent of subjects; that the field of psychiatry yields relatively unfavorable results, because mental diseases are firmly anchored in the brain, but that useful results can be secured as a rule in the chronic noninfectious as well as in the functional diseases which comprise much of the medical practice. He outlines the methods which he employs, making no claim for novelty, and indicates what he believes could be their use in diseases of various systems and organs. In all instances, he adds, psychotherapy must be added to hypnosis if the patient is to achieve a real adjustment to his environment.

"The working of hypnosis," he states, "naturally derives from the central nervous system and therefore a sound central nervous system is prerequisite. Accordingly it is not remarkable that hypnosis practically always fails if this system itself is diseased or abnormal" (p. 23). Hysteria and neurasthenia he sees as exceptions to this rule.

The exposition is brief and generally lacking in statistical presentations and case histories. Consequently, the clinical results secured by the author cannot be appraised.

Apparently he is unfamiliar with certain recent experimental studies which have sharpened our concepts of hypnosis. Perhaps the weakest portions of his monograph are his attempts to formulate a working view of hypnosis. He mentions psychoanalysis several times, but exhibits little evidence of deep-seated freudian influence. Briefly stated, he considers almost all the influences which physicians exert on their patients, aside from medicines, surgery and other objective agencies, as suggestion. In this crude concept, he shows little evidence of basic training in experimental psychology.

Again, when he distinguishes between the conscious (Oberbewusstsein), as our normal waking state, and the subconscious (Unterbewusstsein), as including unattended sensational impressions, he evidently has forgotten the studies of Heymans and others on the inhibition of sensations. His theoretical differentiation between waking and sleeping consciousness (Wachpsyche and Schlafpsyche) lacks the accuracy of scientific as well as philosophic foundation; yet in terms of this differentiation he presents his clinical views and experiences.

He defends hypnosis against the charge that it can weaken the patient's will (p. 34), yet inconsistently admits that the will during hypnosis is set aside (p. 35) and that the patient in a somnolent state (p. 41) is led passively by the hypnotist (p. 43).

Notwithstanding these failings, the little volume should be read by every psychiatrist, albeit critically.

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Harry E. Bacon, B.S., M.D., F.A.C.S., Professor and Head of Department of Proctology, Temple University Medical School and Hospital, Philadelphia, Pa. In Two Volumes. Third edition. Cloth. Price, $30 the set. Pp. 540; 541-1127, with 755 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1949.

This is a peerless work by a surgeon of skill and integrity who has drawn from his own vast experience, as well as that of his many friends in the medical profession, to compile a text which is literally an encyclopedia of diseases of the anus, rectum and colon. This work consists of two volumes of 29 chapters and 1,127 pages. The work is profoundly written and beautifully illustrated with many color plates, and the author and subject indexes would answer the need of anyone requiring information on diseases of the colon. The volumes have been organized sedulously, are beautifully printed and easily read.

No condition is treated lightly because of its relative unimportance. All material has been brought up to date, and the book has been revised entirely.

This work is recommended to all physicians who are interested in diseases of the colon and also to the undergraduate and postgraduate student of medicine.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TRACK WORK AND A BOY'S HEART

To the Editor:—I have always thought that track and crew were too strenuous on a boy's heart and now my boy aged 12 is anxious to do track work. Am I right or wrong? He ran 1 mile in seven and one-half minutes recently.

George A. Bakke, M.D., Oakland, Calif.

ANSWER.—An official statement of the Committee on the Role of Exercise in Physical Fitness states that "a normal healthy child cannot do himself permanent organic injury by physical exertion." However, the advisability of specialization in distance events by a boy aged 12 is open to question. Track events for youth of the prepubescent age group may well be confined to those of short duration, such as the 40, 50 and 60 yard dashes. It has also been widely recommended that competition for youths of this maturity level be limited to a few invitational and informal play-day events, in which participants are carefully classified on the basis of one of the formulas available for the purpose; e. g., age-height-weight determinations. Ordinarily, fatigue and its associated distress act as a "safety valve" in preventing overstrain and cause a child to slow down or stop activity before the physiologic limit or the ultimate capacity of the organs involved is reached. However, the emotional stimulus which is often associated with a highly competitive situation may result in carrying the activity past healthful fatigue to a stage of harmful exhaustion. When track events for the younger age groups are confined to those demanding limited periods of sustained effort rather than long trials of endurance this possibility is reduced if not eliminated. Determination of physiologic soundness by medical examination should, of course, be a requisite to participation in strenuous activity, and it should be kept in mind that some children react unfavorably to exercise and vary in their ability to benefit from it.

JUNGLE GYMS

To the Editor:—Our school system is about to install some jungle gyms for the children in the schoolyards. The question has been brought to me, whether it is safer to have beach sand which will not pack for the base or a firm base such as concrete or asphalt. I believe that there will be fewer sprains and fractures from falling if the base is firm and not uneven and shifty, as it would be with sand.

William F. Mahoney, M.D., Saco, Maine.

ANSWER.—The answer to this question depends somewhat on the kind of maintenance available. A properly kept up pit beneath apparatus from which there is possibility of falling offers some protection for children. Unless the pits can be kept filled and properly leveled, they may be more of a hazard than a safeguard. Recommendations on care of apparatus and facilities include the following item under care of gymnasium frames, bars and rings: "Pits beneath apparatus should be filled with sand and/or shavings, which should be kept loose and comparatively level." The construction of the jungle gym and castle tower makes the possibility of falls to the ground from this type of apparatus less likely than from rings or horizontal bars. In many situations a smooth asphalt surface under the jungle gym or castle tower will prove the best practical solution. Where there is adequate custodial service to insure continual top-grade upkeep, sand pits will have considerable protective value.

DICUMAROL® TOXICITY

To the Editor:—The accepted method for treatment of toxicity due to dicumarol® includes transfusions of plasma and/or whole blood, preferably the latter. In cases with gross hematuria as a sign of toxicity, how much danger is there of a lower nephron nephrosis type of transfusion reaction to whole blood with subsequent development of anuria? Does the toxic hematuria predispose a patient to this type of transfusion reaction?

Edward W. Bixby Jr., M.D., Wilkes-Barre, Pa.

ANSWER.—Hematuria as a result of toxicity due to dicumarol® is probably caused by glomerular damage. Lower nephron nephrosis is the result of a transfusion reaction and is a separate process. There is no reason why transfusions in persons with hematuria due to dicumarol® should be particularly likely to result in lower nephron nephrosis.

PHARMACOLOGIC PROPERTIES OF HOPS

To the Editor:—An Italian woman aged 70 soaked 1 pound (0.5 Kg.) of hops in water for three days, then boiled them and drained off the resultant liquid into a bottle. In the belief that this liquid had medicinal qualities she drank about 4 fluidounces (118 cc.) in one dose. Twenty minutes later she felt sick; the condition became progressively worse, and two hours later she called me. I found the woman in a state of collapse; irritable, apprehensive, with rapid respiration, pulse rate 90 per minute, heart sounds regular but of poor muscular quality, lungs clear, blood pressure 95 systolic and 65 diastolic and the skin dry. The pupils were widely dilated and did not react to light. She complained of heat and dryness of mouth and throat, and thirst. She had frequent desire to urinate but was unable to do so. The picture simulated belladonna poisoning. I gave her an emetic, and she vomited three or four times. Then I gave her clysis of 5 per cent dextrose in isotonic sodium chloride solution. She had to be catheterized six hours later. She spent a restless night, but the following morning her pupils reacted to light, the bladder voided freely and she made a full recovery. What is the nature of the alkaloid in hops? Is it similar to belladonna?

Peter Vitulli, M.D., Brooklyn.

ANSWER.—Doubt exists as to whether hops contain an alkaloid. Power, Tatin and Rogerson reported finding a trace of alkaloid in 1913, but Just and Fink in 1936 failed to prove the presence of an alkaloid in hops after extensive experiments based on the alkaloid solubility in dilute acids, extraction from alkaline solutions with organic solvents, precipitation and turbidity tests and the stability of alkaloids during the methods of extraction employed. They concluded that the physiologic action of hops cannot therefore be referred to the presence of alkaloids. The active principles of hops are referred to as lupulin, and contain, among other things, two bitter acids (alpha and beta lupulinic acids) which have a stimulant effect on the respiratory and vagus centers followed by a depressant effect. Lupulin contains another constituent which is insoluble in water, but which is a strong cardiac poison. The presence of a tannin has been claimed by some but has been repeatedly denied by others.

Hops have been ascribed the therapeutic properties of sedation and hypnosis. It was once the practice to stuff pillows with them because it was believed such a pillow would induce sleep. The sedative and hypnotic properties are due primarily to the bitter acids. The pharmacologic properties vary with the different varieties of hops. Hops also contain arsenic and copper derived from the soil, but the quantities are too small to be harmful and are largely eliminated in the brewing process. Lupulone (the beta form of the bitter acid) is said to have allergenic properties, and it is believed that the addition of some substance in the brewing process completely inhibits its activity.

Reports of a similar case of poisoning from hops have not been found in the literature, nor is there any indication of the presence naturally of a toxic agent in large enough quantities to cause such alarming symptoms. Perhaps this incident can best be ascribed to coincidence or gross contamination of the hops; for instance, had the woman gathered the hops herself, she might have inadvertently included a stalk or leaf of the familiar and plentiful jimson weed (stramonium), which would produce symptoms similar to the ones described by reason of its content of belladonna alkaloid.

PROCAINE USED INTRAVENOUSLY

To the Editor.—I have just heard of a therapeutic procedure which seems to me highly irrational and wish to learn the truth concerning it. A physician attending a patient who was hospitalized for coronary thrombosis and returned home in a convalescent state was asked for something to relieve severe pains in the left arm and shoulder. Morphine is not well tolerated by the patient, and other drugs such as meperidine (demerol®) gave only partial relief. So the physician ordered intravenous injections of procaine (novocain®), and these were given into a jugular vein. Is there any rational and safe basis for such therapy?

M.D., Maryland.

ANSWER.—Although the value of intravenously given procaine in the relief of pain, treatment of serum sickness and correction or prevention of cardiac arrhythmias due to cyclopropane anesthesia appears established, the question of its safety when given by this route is debatable. Allen and Sufford (*Anesth. & Analg.* 26:133, 1947) have reported the use of large quantities of procaine intravenously (10 to 20 Gm. daily) without untoward effects and with the production of satisfactory analgesia and anesthesia. Graubard, Robertazzi and Peterson (*New York State J. Med.* 47:2187, 1947) have pointed out that the toxicity of procaine is one of the main considerations in its intravenous use. The toxicity appears to be dependent more on the concentration injected than on the total amount, because of the rapid metabolism of procaine.

Although the principal toxic action of procaine used intravenously is stimulation of the central nervous system (similar to that of cocaine) with production of convulsions, the cardiac effects cannot be ignored. Burstein (*Anesthesiology* **1**:167, 1940;

7:2 and 113, 1946) has shown that procaine reduces the irritability of the myocardium, interferes with conduction in the bundle of His and prolongs the refractory period of the muscle. Wilburn and Uhley (correspondence, THE JOURNAL, p. 449, Oct. 9, 1948) have cautioned against the intravenous use of procaine in patients with inflammatory or degenerative cardiac lesions.

Although procaine might prove effective in combating pain incident to coronary thrombosis, it might also depress the heart and produce serious results. Giving the drug into the jugular vein would tend to permit a higher concentration to reach the right side of the heart, a factor which might be important, depending on the site of the infarction. Not all the cardiac actions of procaine can be considered detrimental in cases of coronary thrombosis. The slowing of conduction time and prolongation of the refractory period could be beneficial, but this action involves a mechanism similar to that of quinidine and not of digitalis. Furthermore, if digitalis is given to a patient receiving procaine intravenously, the toxicity of the digitalis may be increased.

ESTIMATION OF BASAL METABOLIC RATE

To the Editor:—Is the method of estimating the basal metabolic rate by an index using respiratory and pulse rates reliable?

M. M. Young, M.D., Pleasant Hill, Tenn.

ANSWER.—Several formulas have been suggested for estimation of the basal metabolic rate employing the pulse rate, pulse pressure and respiratory rate, separately or in various combinations. None of these is recommended, because: (1) any of these methods constitutes only a gross estimate, usually not accurate within 20 per cent, although usually indicating whether the rate is high, probably normal or low; (2) the estimate of a trained clinician is usually more accurate, based as it is on the observations mentioned plus (*a*) perhaps more significant points in the history and physical examination and often, certain laboratory data (differential white blood cell count, serum protein-bound iodine and blood cholesterol, and (*b*) evaluation of certain factors which may greatly alter pulse rate, pulse pressure and respiratory rate (nervous influences, psychic factors, fever, respiratory and circulatory disorders).

Even when the basal metabolic rate is measured by the most accurate known method (calculation of oxygen consumption), evaluation by an experienced physician is necessary to determine the significance of the resultant figure.

CANCER OF THE BREAST

To the Editor:—I have had difficulty locating recent references to the postoperative treatment of carcinoma of the breast in a woman who is menstruating. How can metastasis be prevented? Are roentgen rays valuable? How should they be used? Should sex hormones be employed? If so, how?

M.D., Illinois.

ANSWER.—The prevention of metastasis in postoperative cases of carcinoma of the breast is theoretically possible with irradiation. Roentgen rays cause death of cancer cells and fibrotic reaction, which entraps cancer cells and prevents their spread. There is a difference of opinion concerning technics of roentgen therapy. Some do not use it after radical mastectomy; some use it when the pathologist reports involvement of axillary nodes; and some use it routinely after operation. You should consult a radiologist in your city for the particular treatment in your case. As far as is known, castration by any method and sex hormone therapy do not prevent metastasis; they are used as palliative treatment after metastasis has occurred.

HYPERTENSION AND TACHYCARDIA

To the Editor:—What is the cause of a high cardiac rate, 118 per minute with normal basal metabolic rate in a formerly hyperthyroid patient? The patient now also has hypertension (systolic pressure 188 and diastolic 166).

M.D., New York.

ANSWER.—The coexistence of hypertension and tachycardia makes one think at once of the possibility of a pheochromocytoma with excessive secretion of the adrenals. Generally in such cases there is an increase in the basal metabolic rate too. At least, this diagnosis should be considered further and tested, for example, by the use of piperidylmethyl benzodioxane. It is, however, important to rule out an abnormal heart rhythm. Therefore, electrocardiographic study is in order. Nervousness per se would be an extremely rare cause for constant tachycardia in hypertension. Essential hypertension does not carry with it a fast heart rate. It would be of some importance to know the age of the patient and the constancy of this heart rate.

MENSTRUATION TWICE A MONTH

To the Editor:—A girl 16 years old menstruates twice each month to five days; 4 to 5 pads are used during the first three days. giving her vitamin K and calcium. What else would you suggest?

J. O. Helm, M.D., New Florence, Mo

ANSWER.—This patient deserves endocrinologic study. A pelvic examination should be made to rule out pelvic pathologic changes. This can frequently be done, without appreciably disturbing the hymen, with a one finger vaginal examination, a rectal examination and a rectovaginal examination. A narrow Pederson speculum provides adequate access to the cervix.

Perhaps there is an inadequate amount of iodine in her drinking water. Lugol's solution might be administered for a brief period. This should be followed with iodized table salt which will provide adequate amounts of iodine. A daily record of the basal body temperature and of the morning pulse rate should be kept.

Even if the basal metabolic rate and blood cholesterol are at normal levels, small doses of thyroid may be given—starting with ½ grain and increasing by ½ grain doses. At least three or four weeks should elapse between increases and the morning pulse rate, before the patient's arising, must not exceed 76 or 80. *This regimen and adequate amounts of protein and vitamin* often will regulate the menstrual cycle. Obese patients should reduce their weight.

Many of these patients have either an anovulatory cycle or infrequent ovulations. A study of ovulation can be obtained from suction biopsy of the endometrium, which is best done during the first hour or two of menstruation. Estrogens and androgens, in general, do not serve any useful purpose, except where the patient is bleeding profusely and not able to keep the blood cell count up, estrogen may be used to stop ovulation for a period long enough to get the blood up to normal levels.

While many of these patients "straighten out" in later life, others do not, and they eventually may show signs of sterility.

IS EPILEPSY HEREDITARY?

To the Editor:—A woman, 34 years old, wishes to marry, but she has a younger sister who has epilepsy. She becomes depressed at times, usually during her menses, but has not had any sign of epilepsy. Would her children have epilepsy?

M.D., California.

ANSWER.—Epilepsy per se is not inherited, but a predisposition to seizures may be. This is a recessive mendelian trait. The degree of predisposition varies for each person. If the sister's epilepsy is acquired, if this is the only instance of epilepsy or migraine among the relatives, if the onset of seizures occurred in later years and if she has a normal intelligence, the development of epilepsy is not likely in the prospective bride. There would be even less danger of epilepsy in the children if the groom is free of a predisposition to seizures. More specific information might be gained from electroencephalograms of the sister and her fiancé. This subject is discussed by W. G. Lennox in the book "Science and Seizures" (New York, Harper & Brothers, 1946) and in his article "Marriage and Children for Epileptics" (*Human Fertil.* **10**:97-106 [Dec. 15] 1945).

ALOPECIA TOTALIS

To the Editor:—A patient aged 21 years and weighing 200 pounds (91 Kg.), the mother of three children, has had bald spots on her head since she was 5 years of age. Six months ago she had a fair amount of hair, but it began to fall out. There was no illness or nervous shock. Now her hair, as well as her eyebrows and eyelashes, is entirely gone. Dandruff is absent, and her general health is good. Please advise as to the best treatment in this case.

A. A. Skemp, M.D., La Crosse, Wis.

ANSWER.—This patient apparently had alopecia areata which progressed to alopecia totalis. There is no specific treatment for this disease, nor is there a specific cause, although in some cases there seems to be a link with the emotions. Endocrinologic abnormalities, foci of infection and nutritional disturbances long have been suspected but never established as causative factors. Psychotherapy is useful in some cases, and in many cases stimulating measures are sometimes effective. Erythematous doses of ultraviolet rays, an ointment containing histamine or ammoniated mercury, massage and vasodilating agents, such as nicotinic acid, are the measures used most frequently. In the majority of cases of alopecia areata new hairs do appear in the bald patches, but in cases of total alopecia permanent regrowth occurs in only about 3 per cent of the cases.

PENICILLIN DESENSITIZATION

ditor:—**A patient, after receiving injections of protein penicillin ame oil, 1 cc. daily for about one week, had hives and vasomotor itis, each of which persisted for about ten days. During this period temporary relief was obtained with diphenhydramine hydrochloride. Is it desirable to desensitize the patient in order that at some future date penicillin may again be administered? Also, please give details of testing for sensitivity to penicillin, sesame oil and procaine in this patient. Undoubtedly the allergic reaction was due to the penicillin, but the other two possibilities probably must be considered. Assuming that sensitivity to one of the three items is shown by tests, recommend the best method of desensitizing.**

M.D., Washington.

Answer.—In ordinary circumstances desensitization to penicillin is not practical. In view of the extensive use of penicillin, reactions have been relatively infrequent and mild. The procedure for desensitization to penicillin is empiric, and a standard initial dose or incremental doses cannot be prescribed since the patient's reaction cannot be anticipated at the beginning of the desensitization program. One must start with small arbitrarily determined quantities of penicillin to be followed with small incremental doses more or less determined by the patient's reaction to the previous dose. Hospitalization, therefore, is almost imperative for the desensitization of patients who have severe reactions to small quantities of penicillin. The empiric nature of the desensitizing procedure is well illustrated by S. M. Peck (J. A. M. A. 134: 1546 [Aug. 30] 1947) and O'Donovan (*Lancet* 2: 444 [Sept.] 1946).

Some penicillin-sensitive patients may react mildly or not at all to subsequent penicillin therapy. Penicillin-sensitive patients can receive susequent penicillin therapy if necessary by starting with small doses and using the antihistaminics and sympathomimetic drugs accordingly.

Sensitivity to penicillin can be determined by the intradermal injection of 2,000 units of the medication in 0.1 cc. of isotonic sodium chloride solution. The reading should be made after twenty-four and forty-eight hour intervals, since the reaction may often be delayed. Generalized reactions to depot penicillin have been shown to be primarily due to the penicillin and not the sesame oil or procaine components.

Penicillin desensitization may be indicated in penicillin-sensitive persons who are constantly engaged in the handling of this medicament and in patients who have had severe reactions to penicillin and who will require penicillin therapy in the immediate future, e. g., in surgical treatment and chronic infections (bronchiectasis).

PAROXYSMAL AURICULAR TACHYCARDIA

To the Editor:—**Have there been any recent developments in the etiologic basis and treatment of paroxysmal auricular tachycardia?**

Harry R. Deane, M.D., St. Petersburg, Fla.

Answer.—There has been nothing new. Some source of sensitization should always be looked for and can occasionally be found. Many cases are migraine equivalents, and a family history of migraine or paroxysmal tachycardia can often be elicited. Even if a source is not found, histamine desensitization may be successful. The history may also elicit some gastrointestinal disturbance other than allergy. Fatigue, overwork, overexertion, tobacco and liquor should also be considered.

Treatment should include a careful search for some etiologic factor. Pressure over the carotid sinus will usually stop the attack at once. In some cases in which this is not successful, pressure on the eyeball will cause a similar reflex. Syrup of ipecac is effective. It may induce emesis, but that is not a deterrent. Quinidine sulfate may be administered orally if the attacks persist. It should be given in divided doses of 3 grains (0.2 Gm.) every two hours for six to eight doses. Any idiosyncrasy to the drug should be apparent after the first dose, and administration of the drug can be stopped.

Acetylbetamethylcholine may be used carefully, but it may cause disturbing symptoms. It can be given in doses of 1/6 to 2/3 grain (10 to 40 mg.) intramuscularly. A constrictor should always be applied about the site of the injection. This can be released at intervals, allowing a slow absorption, or absorption can be terminated by maintaining constriction. Atropin 1/100 grain (0.6 mg.) should be kept at hand for instant use. Bromides or barbiturates may be given and may aid in the effectiveness of the simpler measures. Morphine should not be used in recurring attacks because of the danger of habit formation. Neostigmine 1/150 grain (0.4 mg.) has been reported of value.

There will be some cases involving some underlying cardiac pathologic change, such as an old rheumatic heart disease. In some of these digitalis may be used. Digitalis may induce a fibrillation, which will rarely become permanent [illegible]

POISON IVY

To the Editor:—**I have seen several patients with dermatitis venenata due to poison ivy. A mild acute stage developed into a chronic skin condition with occasional small patches or lines resembling acute exacerbations with vesiculation. All these patients are young adults, and superficial—if this expression is permissible—reexposure to the agent is possible. Treatment has been attempted with lotions made up of calamine, sugar of lead, and injections of aqueous and of oily suspensions of the allergenic principle. Antihistaminics were tried but were not effective. Would sodium thiosulfate be of value as a detoxifying agent, either topically or intravenously? Could it be used in children aged 8 to 12? Are ultraviolet rays of value, with the water-cooled lamp and pressure?**

R. J. Kent, M.D., Savannah, N. Y.

Answer.—The best way to prevent an attack of ivy dermatitis is to avoid exposure to the plant. Shelmire has produced desensitization by topical applications of the active principle of the plant using increasing doses at intervals over a long period of time. Some workers regard autohemotherapy as a useful method of treatment and desensitization, and some still regard intravenously administered sodium thiosulfate with favor in doses of 1 Gm. for adults and half that amount for children. The use of a water-cooled ultraviolet lamp is not likely to be effective in desensitization.

FUNGOUS INFECTIONS AND FOOT BATHS

To the Editor:—**What is the value of sodium thiosulfate solution in foot baths for the prevention of fungous infections at such places as showers in gymnasiums and at swimming pools? Would the use of one of the newer foot powders containing undecylenic acid be of more value in preventing fungous infection of the feet among the members of a high school athletic team?**

T. Ewing Thompson Jr., M.D., Pittsburgh, Pa.

Answer.—The use of foot baths with a solution of sodium thiosulfate to prevent infection of the feet with fungus is generally held to be inadequate and of doubtful value even when the feet are immersed for long periods. Better results are obtained by drying the feet thoroughly after showering or swimming and then applying a foot powder, such as one of the newer powders mentioned.

METHIONINE

To the Editor:—**What are the dangers, if any, of prolonged administration of methionine over several months of say 2 Gm. daily and a like amount of choline chloride? My concern is with a patient who has had hepatitis with some liver damage. What would be the warning indications to discontinue medication?**

Joe C. Rude, M.D., Galveston, Texas.

Answer.—Methionine and choline occur in considerable quantities in a variety of foods. They have been administered orally in high dosage for periods extending into many months without evidence of harmful effects. Choline given orally in excessive amounts may produce mild symptoms of parasympathetic stimulation, but the dosage is much greater than 2 Gm. daily. Methionine given in conjunction with an adequate diet has not been reported to produce any acute or chronic toxic effects in doses up to as high as 5 Gm. per day.

INFECTIOUS MONONUCLEOSIS

To the Editor:—**An 11 year old boy has had infectious mononucleosis for three months. This diagnosis has been confirmed by heterophil antibody agglutinations in two different laboratories and by white blood cell counts. His symptoms are malaise, lassitude, easy fatigability and persistent low grade fever (around 100 F.). About one month ago aureomycin was given in adequate doses (100 mg. per kilogram of body weight) for four days without response. Are there any suggestions as to therapy? May one with any assurance assure the family that recovery will take place in another three, six or twelve months? Are there any authenticated cases in which symptoms were present for one, two or three years?**

M.D., Tennessee.

Answer.—Specific treatment is not known (we assume that the diagnosis is correct for mononucleosis). A few cases have been reported of patients responding to treatment with aureomycin, but this has not as yet been definitely established. Many clinicians believe that the best treatment is the same as that of virus hepatitis because the underlying pathologic changes of the liver are essentially identical. The eventual prognosis is almost entirely good, and few patients have persistent symptoms for more than six months. In rare cases, however, symptoms may persist for a year or even longer.

CORRECTION

Diethylstilbestrol in Endometriosis.—In the answer to the query of this title in The Journal, August 27, 1949, page 1375, second paragraph, fourth line, the word "menstruating" should have read "ovulating."